

531. 2. 13

A N
A P P E N D I X
T O
Astronomia Carolina:²

CONTAINING,

1. A Proposition touching the Discovery of the true Longitude.
2. Ephemerides of the true Place of the Sun for four Years, beginning *Anno 1665.* with their Use, Exactly Continued and most Easily accommodated to more then 60 years to Come, and as many Past: Referred to the Apparent Time, and Meridian of *London.*
3. Tables of the Equation of Time, Composed for every Day in the same four years; Extended in the like manner, and at least to as many years as the Ephemerides, with Examples of their Use.
4. The Places of 22 Fixt-Stars, rectified by *Alfuphius* to the Year of Christ 936 Compleat, and (except onely *Cor 2*) not hitherto published.
5. A Monitum to Mr. *Vincent Wing.*
6. An Advertisement concerning a New Hypothesis.
7. An Explanation of the Harmony of Magnitudes, and Position of *Aphelions* mentioned in *Ast. Car.* pag. 62.
8. The Observations of Three Lunar Eclipses made at *London,* *Anno 1663.* and *1664.*
9. A Correction of Errors escaped in the Impression of *Ast. Car.* *Anno 1661.*

By *Thomas Streete*, Student in Astronomy and Mathematicks. K

Imprimatur,

Ex aedibus Lamb.
Nov. 23. 1664.

Tho. Cooke Rev. in Christo Patri ac Domino
D. Gilberto Arch. Cant. á Sacris.

L O N D O N,
Printed for *Francis Cossin* at the Anchor and Mariner in *Towerstreet.* 1664.



Viro Multiplici literarum genere
Perpolito,
Eóq; nomine plurimùm
Honorando,
Eliæ Ashmole
Armigero,
Feciali Windsorensi,
Vedigalis Novi Inspectori Regio,
Opusculum hoc Astronomicum
qualecunq;
Author
Gratitudinis ergo
Humiliter
D. D. D.



*A Proposition touching the Discovery of the
true Longitude.*

I do here think it fitting for once publique-
ly to propose unto all the **V**World, that
by the farther blessing of God on my **A**stronomi-
cal Studies since the publication of my *Astronomia
Carolina*, I can Discover and Demonstrate the
never yet discovered Art and Science of finding
the true Longitude, and can make it Universal-
ly practicable at Sea or Land, with the like
Ease and Certainty as the Latitude: And
(though the failings of several specious preten-
ders to this discovery have almost perswaded the
VWorld to beleieve the impossibility thereof)
If those that are most concerned herein will ac-
cept of it, either upon the same termes which
themselves have already offered, or other the
like just and proportionable considerations,
this proposal shall be (God willing) on my
part faithfully and according to the attest of
competent Judges performed; Otherwise I in-
tend not to proceed any farther with it.

Ephem. G. Anno 1665. First after Leap-year.

| Mon. | Janua. | Febru. | March. | April. | May. | June. |
|------|--------------|--------------|--------------|--------------|--------------|--------------|
| Day. | h. o. / . // | h. o. / . // | h. o. / . // | h. o. / . // | h. o. / . // | h. o. / . // |
| 1 | 21 50 12 | 23 24 29 | 21 18 43 | 22 2 26 | 21 7 15 | 20 48 11 |
| 2 | 22 57 21 | 24 25 3 | 22 28 23 | 23 1 2 | 22 4 59 | 21 45 25 |
| 3 | 23 58 30 | 25 25 35 | 23 28 2 | 23 59 37 | 23 2 42 | 22 42 39 |
| 4 | 24 59 39 | 26 25 6 | 24 27 39 | 24 55 10 | 24 0 24 | 23 39 52 |
| 5 | 26 0 47 | 27 26 34 | 25 27 13 | 25 56 40 | 24 58 4 | 24 37 4 |
| 6 | 27 1 53 | 28 27 0 | 26 26 46 | 26 55 8 | 25 55 42 | 25 34 15 |
| 7 | 28 2 59 | 29 27 26 | 27 26 16 | 27 53 54 | 26 53 19 | 26 31 27 |
| 8 | 29 4 4 | 30 27 49 | 28 25 44 | 28 51 5 | 27 50 55 | 27 28 38 |
| 9 | 0 5 8 | 1 8 10 | 29 25 9 | 29 50 22 | 28 48 31 | 28 25 48 |
| 10 | 1 6 12 | 2 28 30 | 0 2 32 | 0 48 42 | 29 46 4 | 29 22 58 |
| 11 | 2 7 14 | 3 28 48 | 1 23 54 | 1 47 1 | 0 43 37 | 0 20 8 |
| 12 | 3 8 16 | 4 29 5 | 2 23 15 | 2 45 18 | 1 41 8 | 1 17 19 |
| 13 | 4 9 17 | 5 29 19 | 3 22 32 | 3 43 34 | 2 38 38 | 2 14 29 |
| 14 | 5 10 17 | 6 29 32 | 4 21 47 | 4 41 47 | 3 36 7 | 3 11 39 |
| 15 | 6 11 14 | 7 29 42 | 5 21 0 | 5 39 59 | 4 33 35 | 4 8 48 |
| 16 | 7 12 11 | 8 29 50 | 6 20 11 | 6 38 8 | 5 31 2 | 5 5 57 |
| 17 | 8 13 7 | 9 29 57 | 7 19 21 | 7 36 16 | 6 28 28 | 6 3 6 |
| 18 | 9 14 2 | 10 30 2 | 8 18 28 | 8 24 22 | 7 25 53 | 7 0 15 |
| 19 | 10 14 56 | 11 30 5 | 9 17 33 | 9 32 27 | 8 23 17 | 7 57 24 |
| 20 | 11 15 49 | 12 30 6 | 10 16 35 | 10 30 29 | 9 20 40 | 8 54 33 |
| 21 | 12 16 4 | 13 30 5 | 11 15 35 | 11 28 30 | 10 18 1 | 9 51 42 |
| 22 | 13 17 29 | 14 30 1 | 12 14 34 | 12 26 30 | 11 15 32 | 10 48 51 |
| 23 | 14 18 18 | 15 29 56 | 13 13 31 | 13 24 28 | 12 12 43 | 11 46 0 |
| 24 | 15 19 5 | 16 29 48 | 14 12 25 | 14 22 24 | 13 10 3 | 12 43 10 |
| 25 | 16 19 50 | 17 29 39 | 15 11 18 | 15 20 18 | 14 7 22 | 13 40 21 |
| 26 | 17 20 35 | 18 29 29 | 16 10 7 | 16 18 12 | 15 4 40 | 14 37 31 |
| 27 | 18 21 19 | 19 29 16 | 17 8 55 | 17 16 4 | 16 1 57 | 15 34 41 |
| 28 | 19 22 0 | 20 29 1 | 18 7 42 | 18 13 54 | 16 59 14 | 16 31 52 |
| 29 | 20 22 40 | | 19 6 26 | 19 11 42 | 17 56 30 | 17 29 3 |
| 30 | 21 23 17 | | 20 5 9 | 20 9 29 | 18 53 45 | 18 26 14 |
| 31 | 22 23 54 | | 21 3 48 | | 19 50 59 | |

Ephem. ☉. Anno 1665. First after Leap-Year.

| Mon. | July. | | | | August. | | | | Septemb. | | | | Octob. | | | | Novemb. | | | | Decemb. | | | | |
|------|-------|----|----|------|---------|----|----|------|----------|----|----|------|--------|----|----|------|---------|----|----|------|---------|----|----|------|--|
| Day. | s. | o. | ' | ///. | s. | o. | ' | ///. | s. | o. | ' | ///. | s. | o. | ' | ///. | s. | o. | ' | ///. | s. | o. | ' | ///. | |
| 1 | 19 | 23 | 24 | ℒ | 19 | 22 | 7 | ℳ | 19 | 23 | 5 | ≡ | 18 | 33 | 58 | ℳ | 19 | 36 | 42 | × | 20 | 3 | 42 | | |
| 2 | 20 | 20 | 36 | | 20 | 0 | 7 | | 20 | 1 | 8 | | 19 | 33 | 33 | | 20 | 37 | 17 | | 21 | 4 | 51 | | |
| 3 | 21 | 17 | 50 | | 20 | 57 | 50 | | 20 | 59 | 43 | | 20 | 33 | 10 | | 21 | 37 | 53 | | 22 | 6 | 1 | | |
| 4 | 22 | 15 | 4 | | 21 | 55 | 34 | | 21 | 58 | 20 | | 21 | 34 | 51 | | 22 | 38 | 31 | | 23 | 7 | 11 | | |
| 5 | 23 | 12 | 17 | | 22 | 53 | 18 | | 22 | 56 | 59 | | 22 | 32 | 33 | | 23 | 39 | 10 | | 24 | 8 | 23 | | |
| 6 | 24 | 9 | 31 | ⊙ | 23 | 51 | 4 | | 23 | 55 | 39 | | 23 | 2 | 15 | | 24 | 39 | 51 | | 25 | 9 | 35 | | |
| 7 | 25 | 6 | 45 | | 24 | 48 | 51 | | 24 | 54 | 22 | | 24 | 32 | 2 | | 25 | 40 | 33 | | 26 | 10 | 47 | | |
| 8 | 26 | 4 | 0 | | 25 | 46 | 39 | | 25 | 53 | 8 | | 25 | 31 | 49 | | 26 | 41 | 17 | | 27 | 12 | 0 | | |
| 9 | 27 | 1 | 15 | | 26 | 44 | 29 | | 26 | 51 | 55 | | 26 | 31 | 39 | | 27 | 42 | 3 | | 28 | 13 | 13 | | |
| 10 | 27 | 58 | 32 | ♊ | 27 | 42 | 21 | | 27 | 50 | 43 | | 27 | 31 | 32 | | 28 | 42 | 50 | | 29 | 14 | 26 | | |
| 11 | 28 | 55 | 50 | | 28 | 40 | 15 | | 28 | 49 | 34 | | 28 | 31 | 25 | | 29 | 43 | 38 | ♋ | 30 | 15 | 40 | | |
| 12 | 29 | 53 | 8 | | 29 | 38 | 11 | | 29 | 48 | 27 | | 29 | 31 | 21 | × | 30 | 44 | 28 | | 1 | 16 | 54 | | |
| 13 | ℒ | 0 | 50 | 28 | ℳ | 0 | 36 | 8 | ≡ | 0 | 47 | 23 | ≡ | 0 | 31 | 19 | | 1 | 45 | 19 | | 2 | 18 | 8 | |
| 14 | 1 | 47 | 47 | | 1 | 34 | 5 | | 1 | 46 | 20 | | 1 | 31 | 19 | | 2 | 46 | 10 | | 3 | 19 | 22 | | |
| 15 | 2 | 45 | 7 | | 2 | 32 | 5 | | 2 | 45 | 20 | | 2 | 31 | 21 | | 3 | 47 | 3 | | 4 | 20 | 37 | | |
| 16 | 3 | 42 | 28 | | 3 | 30 | 7 | | 3 | 44 | 21 | | 3 | 31 | 25 | | 4 | 47 | 58 | | 5 | 21 | 51 | | |
| 17 | 4 | 39 | 50 | | 4 | 28 | 9 | | 4 | 43 | 24 | | 4 | 31 | 31 | | 5 | 48 | 53 | | 6 | 23 | 5 | | |
| 18 | 5 | 37 | 13 | | 5 | 26 | 14 | | 5 | 42 | 30 | | 5 | 31 | 39 | | 6 | 49 | 51 | | 7 | 24 | 20 | | |
| 19 | 6 | 34 | 37 | | 6 | 24 | 22 | | 6 | 41 | 39 | | 6 | 31 | 49 | | 7 | 50 | 50 | | 8 | 25 | 34 | | |
| 20 | 7 | 32 | 2 | | 7 | 22 | 30 | | 7 | 40 | 49 | | 7 | 32 | 1 | | 8 | 51 | 49 | | 9 | 26 | 49 | | |
| 21 | 8 | 29 | 28 | | 8 | 20 | 40 | | 8 | 40 | 1 | | 8 | 32 | 14 | | 9 | 52 | 49 | | 10 | 28 | 3 | | |
| 22 | 9 | 26 | 55 | | 9 | 18 | 53 | | 9 | 39 | 15 | | 9 | 32 | 29 | | 10 | 53 | 50 | | 11 | 29 | 17 | | |
| 23 | 10 | 24 | 23 | | 10 | 17 | 7 | | 10 | 38 | 31 | | 10 | 32 | 47 | | 11 | 54 | 52 | | 12 | 30 | 31 | | |
| 24 | 11 | 21 | 53 | | 11 | 15 | 22 | | 11 | 37 | 50 | | 11 | 33 | 6 | | 12 | 55 | 55 | | 13 | 31 | 45 | | |
| 25 | 12 | 19 | 23 | | 12 | 13 | 39 | | 12 | 37 | 10 | | 12 | 33 | 26 | | 13 | 56 | 59 | | 14 | 32 | 58 | | |
| 26 | 13 | 16 | 54 | | 13 | 11 | 59 | | 13 | 36 | 32 | | 13 | 33 | 49 | | 14 | 58 | 4 | | 15 | 34 | 11 | | |
| 27 | 14 | 14 | 26 | | 14 | 10 | 20 | | 14 | 35 | 57 | | 14 | 34 | 14 | | 15 | 59 | 11 | | 16 | 35 | 24 | | |
| 28 | 15 | 12 | 0 | | 15 | 8 | 44 | | 15 | 35 | 25 | | 15 | 34 | 40 | | 17 | 0 | 18 | | 17 | 36 | 37 | | |
| 29 | 16 | 9 | 36 | | 16 | 7 | 9 | | 16 | 34 | 54 | | 16 | 35 | 8 | | 18 | 1 | 26 | | 18 | 37 | 49 | | |
| 30 | 17 | 7 | 12 | | 17 | 5 | 35 | | 17 | 34 | 25 | | 17 | 35 | 38 | | 19 | 2 | 34 | | 19 | 39 | 0 | | |
| 31 | 18 | 4 | 49 | | 18 | 4 | 4 | | | | | | 18 | 36 | 9 | | | | | | 20 | 40 | 11 | | |

Ephem. ☉ Anns 1666. Second after Leap-year.

| Mon. | Janua. | Febr. | March. | April. | May. | June. |
|-----------------|---|----------|----------|----------|----------|----------|
| Day | s. O. ' " s. O. ' " s. O. ' " s. O. ' " s. O. ' " s. O. ' " s. O. ' " | | | | | |
| 1 ¹³ | 21 41 21 | 23 9 47 | 21 14 4 | 21 48 15 | 20 32 10 | 20 34 22 |
| 2 | 22 42 30 | 24 10 21 | 22 13 55 | 22 46 52 | 21 51 0 | 21 31 35 |
| 3 | 23 43 40 | 25 10 54 | 23 13 35 | 23 45 26 | 22 48 43 | 22 28 49 |
| 4 | 24 44 49 | 26 11 25 | 24 13 12 | 24 43 59 | 23 46 25 | 23 26 2 |
| 5 | 25 45 50 | 27 11 53 | 25 12 47 | 25 42 29 | 24 44 1 | 24 23 14 |
| 6 | 26 47 2 | 28 12 20 | 26 12 19 | 26 40 58 | 25 41 45 | 25 20 26 |
| 7 | 27 48 9 | 29 12 4 | 27 11 50 | 27 39 25 | 26 39 22 | 26 17 37 |
| 8 | 28 49 14 | 30 13 10 | 28 11 19 | 28 37 51 | 27 36 59 | 27 14 48 |
| 9 | 29 50 19 | 1 13 32 | 29 10 45 | 29 36 14 | 28 34 34 | 28 11 58 |
| 10 | 0 51 23 | 2 13 52 | 0 10 9 | 0 34 35 | 29 32 8 | 29 9 8 |
| 11 | 1 52 26 | 3 14 10 | 1 9 32 | 1 32 54 | 0 29 41 | 0 6 18 |
| 12 | 2 53 27 | 4 14 27 | 2 8 52 | 2 31 11 | 1 27 12 | 1 3 28 |
| 13 | 3 54 28 | 5 14 42 | 3 8 10 | 3 29 27 | 2 24 43 | 2 0 38 |
| 14 | 4 55 28 | 6 14 55 | 4 7 25 | 4 27 41 | 3 22 13 | 2 57 48 |
| 15 | 5 56 26 | 7 15 6 | 5 6 39 | 5 25 52 | 4 19 41 | 3 54 57 |
| 16 | 6 57 23 | 8 15 15 | 6 5 51 | 6 24 3 | 5 17 8 | 4 52 7 |
| 17 | 7 58 19 | 9 15 23 | 7 5 0 | 7 22 12 | 6 14 34 | 5 49 16 |
| 18 | 8 59 15 | 10 15 29 | 8 4 8 | 8 20 19 | 7 12 0 | 6 46 25 |
| 19 | 10 0 10 | 11 15 32 | 9 3 14 | 9 18 23 | 8 9 24 | 7 43 34 |
| 20 | 11 1 2 | 12 15 33 | 10 2 17 | 10 16 21 | 9 6 47 | 8 40 43 |
| 21 | 12 1 53 | 13 15 32 | 11 1 18 | 11 14 28 | 10 4 9 | 9 37 52 |
| 22 | 13 2 43 | 14 15 28 | 12 0 17 | 12 12 28 | 11 1 30 | 10 35 1 |
| 23 | 14 3 33 | 15 15 24 | 12 59 14 | 13 10 27 | 11 58 51 | 11 32 11 |
| 24 | 15 4 21 | 16 15 18 | 13 58 9 | 14 8 23 | 12 56 11 | 12 29 21 |
| 25 | 16 5 7 | 17 15 9 | 14 57 2 | 15 6 18 | 13 53 30 | 13 26 31 |
| 26 | 17 5 51 | 18 14 58 | 15 55 53 | 16 4 11 | 14 50 48 | 14 23 41 |
| 27 | 18 6 34 | 19 14 45 | 16 54 41 | 17 2 3 | 15 48 5 | 15 20 51 |
| 28 | 19 7 16 | 20 14 31 | 17 53 28 | 17 59 54 | 16 45 22 | 16 18 2 |
| 29 | 20 7 57 | | 18 52 13 | 18 57 43 | 17 42 39 | 17 15 12 |
| 30 | 21 8 35 | | 19 50 56 | 19 55 30 | 18 39 54 | 18 12 23 |
| 31 | 22 9 12 | | 20 49 36 | | 19 37 8 | |

Ephem. O. Anno 1666. Second after Leap-year.

| Mon. | July. | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|----------|----------|----------|----------|----------|----------|
| Day. | s. o. / | s. o. / | s. o. / | s. o. / | s. o. / | s. o. / |
| 1 | 19 9 34 | 18 48 31 | 18 48 23 | 18 19 31 | 19 22 0 | 19 48 51 |
| 2 | 20 6 46 | 19 46 10 | 19 46 56 | 19 19 6 | 20 42 34 | 20 50 0 |
| 3 | 21 3 59 | 20 43 52 | 20 45 31 | 20 18 43 | 21 23 10 | 21 51 10 |
| 4 | 22 1 12 | 21 41 35 | 21 44 7 | 21 18 23 | 22 23 47 | 22 52 22 |
| 5 | 22 58 26 | 22 39 19 | 22 42 41 | 22 18 4 | 23 24 26 | 23 53 32 |
| 6 | 23 55 40 | 23 37 5 | 23 41 26 | 23 17 47 | 24 25 7 | 24 54 43 |
| 7 | 24 52 54 | 24 34 51 | 24 40 8 | 24 17 31 | 25 25 49 | 25 55 55 |
| 8 | 25 50 9 | 25 32 40 | 25 38 53 | 25 17 19 | 26 26 33 | 26 57 8 |
| 9 | 26 47 24 | 26 30 30 | 26 37 40 | 26 17 8 | 27 27 18 | 27 58 21 |
| 10 | 27 44 41 | 27 28 21 | 27 36 28 | 27 17 0 | 28 28 5 | 28 59 34 |
| 11 | 28 41 58 | 28 26 14 | 28 35 18 | 28 16 54 | 29 28 52 | 0 0 47 |
| 12 | 29 39 16 | 29 24 6 | 29 34 11 | 29 16 49 | 0 29 41 | 1 2 1 |
| 13 | 0 30 35 | 0 22 5 | 0 33 6 | 0 16 46 | 1 30 32 | 2 3 16 |
| 14 | 1 33 55 | 1 20 3 | 1 32 3 | 1 16 45 | 2 31 24 | 3 4 30 |
| 15 | 2 31 15 | 2 18 2 | 2 31 2 | 2 16 46 | 3 32 17 | 4 5 45 |
| 16 | 3 26 36 | 3 16 3 | 3 30 3 | 3 16 49 | 4 33 11 | 5 6 59 |
| 17 | 4 25 58 | 4 14 6 | 4 29 5 | 4 16 55 | 5 34 6 | 6 8 12 |
| 18 | 5 23 20 | 5 12 12 | 5 28 10 | 5 17 2 | 6 35 3 | 7 9 37 |
| 19 | 6 20 44 | 6 10 17 | 6 27 18 | 6 17 13 | 7 36 1 | 8 10 42 |
| 20 | 7 18 9 | 7 8 25 | 7 26 28 | 7 17 24 | 8 37 1 | 9 11 56 |
| 21 | 8 15 34 | 8 6 35 | 8 25 40 | 8 17 37 | 9 38 1 | 10 12 1 |
| 22 | 9 13 1 | 9 4 47 | 9 24 51 | 9 17 52 | 10 39 1 | 11 14 2 |
| 23 | 10 10 29 | 10 3 0 | 10 24 9 | 10 18 9 | 11 40 3 | 12 15 39 |
| 24 | 11 7 58 | 11 1 15 | 11 22 27 | 11 18 28 | 12 41 6 | 13 16 53 |
| 25 | 12 5 28 | 11 59 32 | 12 22 47 | 12 13 48 | 13 42 10 | 14 18 6 |
| 26 | 13 2 59 | 12 57 51 | 13 22 9 | 13 19 10 | 14 43 15 | 15 19 19 |
| 27 | 14 0 31 | 13 56 12 | 14 21 37 | 14 19 14 | 15 44 20 | 16 20 32 |
| 28 | 14 58 5 | 14 54 35 | 15 21 0 | 15 20 0 | 16 45 27 | 17 21 45 |
| 29 | 15 55 40 | 15 53 0 | 16 20 29 | 16 20 28 | 17 46 35 | 18 22 57 |
| 30 | 16 52 16 | 16 51 25 | 17 19 50 | 17 20 57 | 18 47 42 | 19 24 9 |
| 31 | 17 50 53 | 17 49 54 | | 18 21 28 | | 20 25 19 |

Ephem. ☉. Anno 1657. Third after Leap-year.

| Mon. | Janua. | Febr. | March, | April. | May. | June. |
|------|------------|------------|------------|------------|------------|------------|
| Day. | s. o. / // | s. o. / // | s. o. / // | s. o. / // | s. o. / // | s. o. / // |
| 1 | 21 26 29 | 22 55 4 | 20 59 45 | 21 34 2 | 20 39 17 | 20 20 31 |
| 2 | 22 27 39 | 23 55 39 | 21 59 27 | 22 32 39 | 21 37 2 | 21 17 45 |
| 3 | 23 28 49 | 24 55 12 | 22 59 7 | 23 31 14 | 22 34 46 | 22 14 58 |
| 4 | 24 29 50 | 25 56 43 | 23 58 45 | 24 29 48 | 23 32 28 | 23 12 11 |
| 5 | 25 31 6 | 26 57 13 | 24 58 20 | 25 28 20 | 24 30 9 | 24 9 24 |
| 6 | 26 32 13 | 27 57 41 | 25 57 53 | 26 26 49 | 25 27 48 | 25 6 36 |
| 7 | 27 33 20 | 28 58 6 | 26 57 24 | 27 25 16 | 26 25 16 | 26 3 47 |
| 8 | 28 34 25 | 29 58 31 | 27 56 53 | 28 23 41 | 27 23 3 | 27 0 58 |
| 9 | 29 35 29 | 30 58 54 | 28 56 20 | 29 22 5 | 28 20 28 | 27 58 8 |
| 10 | 30 36 33 | 1 59 14 | 29 55 45 | 30 20 27 | 29 18 12 | 28 55 18 |
| 11 | 1 37 36 | 2 59 32 | 0 55 8 | 1 18 46 | 0 15 46 | 29 52 29 |
| 12 | 2 38 38 | 3 59 49 | 1 54 29 | 2 17 4 | 1 13 18 | 0 49 39 |
| 13 | 3 39 40 | 5 0 5 | 2 53 48 | 3 15 20 | 2 10 48 | 1 46 49 |
| 14 | 4 40 39 | 6 0 18 | 3 53 4 | 4 13 35 | 3 8 18 | 2 43 59 |
| 15 | 5 41 39 | 7 0 30 | 4 52 18 | 5 11 48 | 4 5 47 | 3 41 8 |
| 16 | 6 42 36 | 8 0 39 | 5 51 30 | 6 9 58 | 5 3 14 | 4 38 17 |
| 17 | 7 43 32 | 9 0 47 | 6 50 40 | 7 8 7 | 6 0 40 | 5 35 26 |
| 18 | 8 44 28 | 10 0 53 | 7 49 49 | 8 6 14 | 6 58 6 | 6 32 35 |
| 19 | 9 45 23 | 11 0 58 | 8 48 55 | 9 4 19 | 7 55 31 | 7 29 44 |
| 20 | 10 46 15 | 12 1 0 | 9 47 59 | 10 2 23 | 8 52 54 | 8 26 53 |
| 21 | 11 47 7 | 13 0 59 | 10 47 0 | 11 0 25 | 9 50 16 | 9 24 3 |
| 22 | 12 47 58 | 14 0 56 | 11 46 0 | 11 58 25 | 10 47 37 | 10 21 12 |
| 23 | 13 48 47 | 15 0 52 | 12 44 57 | 12 56 24 | 11 44 58 | 11 18 21 |
| 24 | 14 49 35 | 16 0 46 | 13 43 53 | 13 54 21 | 12 42 18 | 12 15 31 |
| 25 | 15 50 21 | 17 0 38 | 14 42 46 | 14 52 16 | 13 39 7 | 13 12 41 |
| 26 | 16 51 6 | 18 0 28 | 15 41 37 | 15 50 10 | 14 36 55 | 14 9 51 |
| 27 | 17 51 50 | 19 0 16 | 16 40 26 | 16 48 3 | 15 34 12 | 15 7 1 |
| 28 | 18 52 32 | 20 0 2 | 17 39 14 | 17 45 54 | 16 31 31 | 16 4 12 |
| 29 | 19 53 13 | | 18 37 59 | 18 43 43 | 17 28 48 | 17 1 22 |
| 30 | 20 53 52 | | 19 36 42 | 19 41 31 | 18 26 3 | 17 58 33 |
| 31 | 21 54 29 | | 20 35 23 | | 19 23 27 | |

Ephem. © Anno 1667. Third after Leap-year.

| Mon. | July. | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|-------------|-------------|-------------|-------------|-------------|-------------|
| Day | s. O. ' . " | s. O. ' . " | s. O. ' . " | s. O. ' . " | s. O. ' . " | s. O. ' . " |
| 1 | 18 55 44 | 18 34 33 | 18 34 13 | 18 5 5 | 19 7 18 | 19 34 0 |
| 2 | 19 52 56 | 19 32 12 | 19 32 45 | 19 43 9 | 20 7 52 | 20 35 9 |
| 3 | 20 50 9 | 20 29 53 | 20 31 19 | 20 41 5 | 21 8 28 | 21 36 19 |
| 4 | 21 47 22 | 21 27 35 | 21 29 55 | 21 3 54 | 22 9 5 | 22 37 29 |
| 5 | 22 44 35 | 21 25 20 | 22 28 33 | 22 13 5 | 23 9 44 | 23 38 40 |
| 6 | 23 41 48 | 23 23 5 | 23 27 13 | 23 3 18 | 24 10 24 | 24 39 52 |
| 7 | 24 37 2 | 24 20 52 | 24 25 55 | 24 3 2 | 25 11 5 | 25 41 4 |
| 8 | 25 33 18 | 25 18 40 | 25 24 39 | 25 2 49 | 26 11 48 | 26 42 16 |
| 9 | 26 33 34 | 26 16 21 | 26 13 25 | 26 2 38 | 27 12 33 | 27 43 29 |
| 10 | 27 30 50 | 27 14 20 | 27 22 13 | 27 2 19 | 28 13 20 | 28 44 42 |
| 11 | 28 28 6 | 28 12 13 | 28 21 3 | 28 2 22 | 29 14 7 | 29 45 56 |
| 12 | 29 25 24 | 29 10 8 | 29 19 55 | 29 1 17 | 30 14 56 | 30 47 10 |
| 13 | 0 22 43 | 0 8 4 | 0 18 49 | 0 2 13 | 1 15 4 | 1 48 24 |
| 14 | 1 20 2 | 1 6 1 | 1 17 46 | 1 2 12 | 2 16 38 | 2 49 18 |
| 15 | 2 17 22 | 2 4 0 | 2 16 44 | 2 2 13 | 3 17 31 | 3 50 52 |
| 16 | 3 14 43 | 3 2 0 | 3 15 44 | 3 2 15 | 4 18 24 | 4 52 6 |
| 17 | 4 12 5 | 4 0 3 | 4 14 46 | 4 2 20 | 5 19 19 | 5 55 21 |
| 18 | 5 9 27 | 4 53 7 | 5 13 51 | 5 2 27 | 6 20 15 | 6 54 35 |
| 19 | 6 6 50 | 5 56 13 | 6 12 8 | 6 2 37 | 7 21 13 | 7 55 50 |
| 20 | 7 4 15 | 6 54 21 | 7 12 7 | 7 2 48 | 8 22 12 | 8 57 4 |
| 21 | 8 1 40 | 7 52 30 | 8 11 10 | 8 3 0 | 9 23 2 | 9 58 18 |
| 22 | 8 59 7 | 8 50 41 | 9 10 32 | 9 3 15 | 10 24 1 | 10 59 32 |
| 23 | 9 56 34 | 9 48 54 | 10 9 47 | 10 3 31 | 11 25 14 | 12 0 46 |
| 24 | 10 54 3 | 10 47 9 | 11 9 4 | 11 3 49 | 12 26 17 | 13 2 0 |
| 25 | 11 51 33 | 11 45 2 | 12 8 23 | 12 4 9 | 13 27 21 | 14 3 14 |
| 26 | 12 49 3 | 12 43 44 | 13 7 45 | 13 4 31 | 14 28 26 | 15 4 27 |
| 27 | 13 46 35 | 13 42 4 | 14 7 9 | 14 4 55 | 15 29 31 | 16 5 40 |
| 28 | 14 44 8 | 14 40 26 | 15 6 35 | 15 5 20 | 16 30 37 | 17 6 53 |
| 29 | 15 41 43 | 15 38 50 | 16 6 3 | 16 5 47 | 17 31 44 | 18 8 6 |
| 30 | 16 39 19 | 16 37 16 | 17 5 32 | 17 6 16 | 18 32 52 | 19 9 17 |
| 31 | 17 36 55 | 17 35 44 | | 18 6 47 | | 20 10 28 |

Ephem. ☉. Anno 1668. Leap-year.

| Mon. | Janua. | Febru. | Marco. | April. | May. | June. |
|------|------------------|------------------|------------------|------------------|------------------|------------------|
| Day. | 8. O. 1. 11. 12. | 8. O. 1. 11. 12. | 8. O. 1. 11. 12. | 8. O. 1. 11. 12. | 8. O. 1. 11. 12. | 8. O. 1. 11. 12. |
| 1 | 21 11 38 | 22 40 21 | 21 41 58 | 22 8 27 | 21 23 3 | 21 3 54 |
| 2 | 22 12 48 | 23 40 57 | 22 44 39 | 23 17 3 | 22 20 47 | 22 1 7 |
| 3 | 23 13 58 | 24 41 31 | 23 44 18 | 24 15 37 | 23 18 30 | 22 58 20 |
| 4 | 24 15 7 | 25 42 2 | 24 43 13 | 25 14 9 | 24 16 11 | 23 55 33 |
| 5 | 25 16 15 | 26 42 32 | 25 43 26 | 26 12 39 | 25 13 51 | 24 52 45 |
| 6 | 26 17 22 | 27 43 0 | 26 42 58 | 27 11 6 | 26 11 29 | 25 49 56 |
| 7 | 27 18 29 | 28 43 26 | 27 42 28 | 28 9 32 | 27 9 6 | 26 47 7 |
| 8 | 28 19 35 | 29 43 51 | 28 41 55 | 29 7 57 | 28 6 42 | 27 44 18 |
| 9 | 29 20 40 | 30 44 15 | 29 41 21 | 30 6 19 | 29 4 17 | 28 41 29 |
| 10 | 0 21 44 | 1 44 36 | 0 40 44 | 1 4 39 | 0 1 50 | 29 38 39 |
| 11 | 1 22 47 | 2 44 55 | 1 40 5 | 2 2 57 | 0 59 22 | 0 35 49 |
| 12 | 2 23 49 | 3 45 12 | 2 39 24 | 3 1 13 | 1 6 53 | 1 32 59 |
| 13 | 3 24 50 | 4 45 28 | 3 38 41 | 3 59 23 | 2 54 23 | 2 30 9 |
| 14 | 4 25 50 | 5 45 42 | 4 37 56 | 4 57 41 | 3 51 52 | 3 27 18 |
| 15 | 5 26 50 | 6 45 4 | 5 37 9 | 5 55 53 | 4 49 20 | 4 24 27 |
| 16 | 6 27 48 | 7 45 4 | 6 36 20 | 6 54 2 | 5 46 46 | 5 21 36 |
| 17 | 7 28 45 | 8 46 12 | 7 35 29 | 7 52 9 | 6 44 12 | 6 18 45 |
| 18 | 8 29 41 | 9 46 19 | 8 34 35 | 8 50 15 | 7 41 37 | 7 15 54 |
| 19 | 9 30 35 | 10 46 24 | 9 33 39 | 9 48 19 | 8 49 0 | 8 13 4 |
| 20 | 10 31 29 | 11 46 26 | 10 32 41 | 10 46 22 | 9 36 23 | 9 10 13 |
| 21 | 11 32 21 | 12 46 26 | 11 31 42 | 11 44 22 | 10 33 45 | 10 7 23 |
| 22 | 12 33 11 | 13 46 24 | 12 30 40 | 12 42 21 | 11 31 6 | 11 4 32 |
| 23 | 13 34 1 | 14 46 20 | 13 29 35 | 13 40 19 | 12 28 26 | 12 1 41 |
| 24 | 14 34 49 | 15 46 15 | 14 28 29 | 14 38 15 | 13 25 4 | 12 58 51 |
| 25 | 15 35 36 | 16 46 7 | 15 27 21 | 15 36 9 | 14 23 4 | 13 56 1 |
| 26 | 16 36 21 | 17 45 57 | 16 26 11 | 16 24 2 | 15 20 2 | 14 53 11 |
| 27 | 17 37 5 | 18 45 45 | 17 24 59 | 17 31 53 | 16 17 9 | 15 50 21 |
| 28 | 18 37 48 | 19 45 32 | 18 23 45 | 18 29 43 | 17 14 55 | 16 47 32 |
| 29 | 19 38 30 | 20 45 16 | 19 22 29 | 19 27 31 | 18 12 11 | 17 44 43 |
| 30 | 20 39 9 | | 20 21 10 | 20 25 18 | 19 9 26 | 18 41 54 |
| 31 | 21 39 46 | | 21 19 50 | | 20 6 40 | |

Ephem. © Anno 1668. Leap-year.

| Mon. | July. | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|-------------|-------------|-------------|-------------|-------------|-------------|
| Day | s. O. ' . " | s. O. ' . " | s. O. ' . " | s. O. ' . " | s. O. ' . " | s. O. ' . " |
| 1 | 19 39 6 | 19 18 15 | 19 18 34 | 18 50 12 | 19 53 10 | 20 20 18 |
| 2 | 20 36 18 | 20 15 55 | 20 17 8 | 19 49 48 | 20 53 45 | 21 21 28 |
| 3 | 21 33 31 | 21 13 38 | 21 15 43 | 20 19 26 | 21 54 22 | 22 22 38 |
| 4 | 22 30 44 | 22 11 21 | 22 14 21 | 21 49 6 | 22 55 0 | 23 23 48 |
| 5 | 23 27 58 | 23 9 6 | 23 13 0 | 22 48 48 | 23 54 40 | 24 25 0 |
| 6 | 24 25 12 | 24 6 53 | 24 11 41 | 23 48 32 | 24 56 21 | 25 26 12 |
| 7 | 25 22 26 | 25 4 40 | 25 10 25 | 24 48 18 | 25 57 4 | 26 27 24 |
| 8 | 26 19 42 | 26 2 29 | 26 9 10 | 25 48 7 | 26 57 48 | 27 28 37 |
| 9 | 27 16 58 | 27 0 20 | 27 7 58 | 26 47 58 | 27 58 34 | 28 29 50 |
| 10 | 28 14 15 | 27 58 13 | 28 6 47 | 27 47 50 | 28 59 21 | 29 31 4 |
| 11 | 29 11 32 | 28 56 6 | 29 5 38 | 28 47 44 | 0 0 10 | 0 32 17 |
| 12 | 0 8 50 | 29 54 2 | 0 43 2 | 29 47 40 | 1 1 0 | 1 33 31 |
| 13 | 1 6 10 | 0 51 59 | 1 3 28 | 0 47 38 | 2 1 51 | 2 34 45 |
| 14 | 2 3 30 | 1 49 57 | 2 2 26 | 1 47 39 | 3 2 43 | 3 36 0 |
| 15 | 3 0 50 | 2 47 57 | 3 1 26 | 2 47 41 | 4 3 36 | 4 37 14 |
| 16 | 3 58 11 | 3 45 59 | 4 0 27 | 3 47 45 | 5 4 31 | 5 38 28 |
| 17 | 4 55 34 | 4 44 3 | 4 59 31 | 4 47 52 | 6 5 27 | 6 39 42 |
| 18 | 5 52 57 | 5 42 8 | 5 58 38 | 5 48 1 | 7 6 24 | 7 40 57 |
| 19 | 6 50 21 | 6 40 16 | 6 57 46 | 6 48 11 | 8 7 23 | 8 42 12 |
| 20 | 7 47 46 | 7 38 25 | 7 56 57 | 7 48 23 | 9 8 23 | 9 43 26 |
| 21 | 8 45 12 | 8 36 35 | 8 56 10 | 8 48 37 | 10 9 23 | 10 44 40 |
| 22 | 9 42 39 | 9 34 48 | 9 55 25 | 9 48 53 | 11 10 24 | 11 45 54 |
| 23 | 10 40 8 | 10 33 2 | 10 54 41 | 10 49 11 | 12 11 27 | 12 47 8 |
| 24 | 11 37 38 | 11 31 18 | 11 53 59 | 11 49 31 | 13 12 31 | 13 48 22 |
| 25 | 12 35 8 | 12 29 36 | 12 53 20 | 12 49 52 | 14 13 35 | 14 49 35 |
| 26 | 13 32 39 | 13 27 56 | 13 52 44 | 13 50 15 | 15 14 40 | 15 50 48 |
| 27 | 14 30 12 | 14 26 18 | 14 52 9 | 14 50 40 | 16 15 46 | 16 52 1 |
| 28 | 15 27 47 | 15 24 41 | 15 51 37 | 15 51 7 | 17 16 53 | 17 53 13 |
| 29 | 16 25 23 | 16 23 6 | 16 51 7 | 16 51 36 | 18 18 1 | 18 54 25 |
| 30 | 17 22 59 | 17 21 34 | 17 50 38 | 17 52 5 | 19 19 9 | 19 55 37 |
| 31 | 18 20 36 | 18 20 3 | | 18 52 36 | | 20 56 37 |

*A TABLE of Minutes and Seconds, for Years to Come to be Added,
but for Years Past Subtracted, to or from the Place of the Sun
in the foregoing Ephemerides.*

| Years. | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | 56 | 60 |
|--------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| M. D | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " |
| Jan. 1 | 1 45 | 3 31 | 5 16 | 7 1 | 8 47 | 10 32 | 12 18 | 14 3 | 15 48 | 17 34 | 19 19 | 21 4 | 22 50 | 24 35 | 26 20 |
| 11 | 1 46 | 3 31 | 5 17 | 7 2 | 8 48 | 10 33 | 12 19 | 14 4 | 15 50 | 17 35 | 19 21 | 21 6 | 22 52 | 24 37 | 26 23 |
| 21 | 1 46 | 3 32 | 5 17 | 7 3 | 8 49 | 10 35 | 12 21 | 14 6 | 15 52 | 17 38 | 19 24 | 21 10 | 22 55 | 24 41 | 26 27 |
| Feb. 1 | 1 46 | 3 32 | 5 18 | 7 5 | 8 51 | 10 37 | 12 23 | 14 9 | 15 55 | 17 41 | 19 27 | 21 14 | 23 0 | 24 46 | 26 32 |
| 11 | 1 47 | 3 33 | 5 20 | 7 6 | 8 53 | 10 39 | 12 26 | 14 12 | 15 59 | 17 45 | 19 32 | 21 18 | 23 5 | 24 51 | 26 38 |
| 21 | 1 47 | 3 34 | 5 21 | 7 8 | 8 55 | 10 42 | 12 29 | 14 15 | 16 2 | 17 49 | 19 36 | 21 23 | 23 10 | 24 57 | 26 44 |
| Mar. 1 | 1 47 | 3 35 | 5 22 | 7 9 | 8 57 | 10 44 | 12 31 | 14 19 | 16 6 | 17 53 | 19 41 | 21 28 | 23 15 | 25 0 | 26 50 |
| 11 | 1 48 | 3 36 | 5 23 | 7 11 | 8 59 | 10 47 | 12 35 | 14 23 | 16 10 | 17 58 | 19 46 | 21 34 | 23 22 | 25 10 | 26 57 |
| 21 | 1 48 | 3 37 | 5 25 | 7 13 | 9 2 | 10 50 | 12 38 | 14 27 | 16 15 | 18 3 | 19 52 | 21 40 | 23 28 | 25 17 | 27 5 |
| Apr. 1 | 1 49 | 3 38 | 5 27 | 7 15 | 9 4 | 10 53 | 12 42 | 14 31 | 16 20 | 18 9 | 19 58 | 21 46 | 23 35 | 25 24 | 27 13 |
| 11 | 1 49 | 3 39 | 5 28 | 7 17 | 9 7 | 10 56 | 12 46 | 14 35 | 16 24 | 18 14 | 20 3 | 21 52 | 23 42 | 25 31 | 27 21 |
| 21 | 1 49 | 3 40 | 5 29 | 7 19 | 9 9 | 10 59 | 12 49 | 14 38 | 16 28 | 18 18 | 20 8 | 21 57 | 23 47 | 25 37 | 27 27 |
| May 1 | 1 50 | 3 40 | 5 31 | 7 21 | 9 11 | 11 1 | 12 51 | 14 42 | 16 32 | 18 22 | 20 12 | 22 2 | 23 53 | 25 43 | 27 33 |
| 11 | 1 51 | 3 41 | 5 32 | 7 22 | 9 13 | 11 3 | 12 54 | 14 44 | 16 35 | 18 25 | 20 16 | 22 6 | 23 57 | 25 47 | 27 38 |
| 21 | 1 51 | 3 41 | 5 32 | 7 23 | 9 14 | 11 5 | 12 55 | 14 46 | 16 37 | 18 28 | 20 18 | 22 9 | 24 0 | 25 51 | 27 41 |
| June 1 | 1 51 | 3 42 | 5 33 | 7 24 | 9 15 | 11 6 | 12 57 | 14 48 | 16 39 | 18 30 | 20 20 | 22 12 | 24 2 | 25 53 | 27 44 |
| 11 | 1 51 | 3 42 | 5 33 | 7 24 | 9 15 | 11 6 | 12 57 | 14 48 | 16 39 | 18 30 | 20 22 | 22 12 | 24 4 | 25 55 | 27 46 |
| 21 | 1 51 | 3 42 | 5 33 | 7 24 | 9 15 | 11 6 | 12 57 | 14 49 | 16 40 | 18 31 | 20 22 | 22 13 | 24 4 | 25 55 | 27 46 |
| July 1 | 1 51 | 3 42 | 5 33 | 7 24 | 9 15 | 11 6 | 12 57 | 14 48 | 16 39 | 18 30 | 20 21 | 22 12 | 24 3 | 25 54 | 27 45 |
| 11 | 1 51 | 3 42 | 5 33 | 7 23 | 9 14 | 11 5 | 12 56 | 14 47 | 16 38 | 18 29 | 20 20 | 22 10 | 24 1 | 25 52 | 27 43 |
| 21 | 1 51 | 3 41 | 5 32 | 7 22 | 9 13 | 11 4 | 12 54 | 14 45 | 16 35 | 18 26 | 20 17 | 22 7 | 23 58 | 25 48 | 27 39 |
| Aug. 1 | 1 50 | 3 41 | 5 31 | 7 21 | 9 11 | 11 2 | 12 52 | 14 42 | 16 32 | 18 23 | 20 13 | 22 3 | 23 53 | 25 44 | 27 34 |
| 11 | 1 50 | 3 40 | 5 30 | 7 20 | 9 10 | 11 0 | 12 50 | 14 40 | 16 30 | 18 19 | 20 9 | 21 59 | 23 49 | 25 39 | 27 29 |
| 21 | 1 50 | 3 39 | 5 29 | 7 18 | 9 8 | 10 57 | 12 47 | 14 36 | 16 26 | 18 15 | 20 5 | 21 54 | 23 44 | 25 33 | 27 23 |
| Sep. 1 | 1 49 | 3 38 | 5 27 | 7 16 | 9 5 | 10 54 | 12 43 | 14 33 | 16 22 | 18 11 | 20 0 | 21 49 | 23 38 | 25 27 | 27 16 |
| 11 | 1 49 | 3 37 | 5 26 | 7 14 | 9 3 | 10 52 | 12 40 | 14 29 | 16 17 | 18 6 | 19 55 | 21 43 | 23 32 | 25 20 | 27 9 |
| 21 | 1 48 | 3 36 | 5 24 | 7 12 | 9 0 | 10 48 | 12 36 | 14 25 | 16 13 | 18 1 | 19 49 | 21 37 | 23 25 | 25 13 | 27 1 |
| Oct. 1 | 1 48 | 3 35 | 5 23 | 7 10 | 8 58 | 10 45 | 12 33 | 14 21 | 16 8 | 17 56 | 19 43 | 21 31 | 23 19 | 25 6 | 26 54 |
| 11 | 1 47 | 3 34 | 5 21 | 7 8 | 8 55 | 10 42 | 12 29 | 14 17 | 16 4 | 17 51 | 19 38 | 21 25 | 23 12 | 24 59 | 26 46 |
| 21 | 1 47 | 3 33 | 5 20 | 7 6 | 8 53 | 10 40 | 12 26 | 14 13 | 15 59 | 17 46 | 19 33 | 21 19 | 23 6 | 24 52 | 26 39 |
| Nov. 1 | 1 46 | 3 32 | 5 19 | 7 5 | 8 51 | 10 37 | 12 23 | 14 10 | 15 56 | 17 42 | 19 28 | 21 14 | 23 1 | 24 47 | 26 33 |
| 11 | 1 46 | 3 32 | 5 18 | 7 3 | 8 49 | 10 35 | 12 21 | 14 7 | 15 53 | 17 39 | 19 25 | 21 10 | 22 56 | 24 42 | 26 28 |
| 21 | 1 46 | 3 31 | 5 17 | 7 2 | 8 48 | 10 34 | 12 19 | 14 5 | 15 50 | 17 36 | 19 22 | 21 7 | 22 53 | 24 38 | 26 24 |
| Dec. 1 | 1 45 | 3 31 | 5 16 | 7 2 | 8 47 | 10 32 | 12 18 | 14 3 | 15 49 | 17 34 | 19 19 | 21 5 | 22 50 | 24 36 | 26 21 |
| 11 | 1 45 | 3 31 | 5 16 | 7 1 | 8 46 | 10 32 | 12 17 | 14 2 | 15 48 | 17 33 | 19 18 | 21 4 | 22 49 | 24 34 | 26 20 |
| 21 | 1 45 | 3 31 | 5 16 | 7 1 | 8 46 | 10 32 | 12 17 | 14 2 | 15 47 | 17 33 | 19 18 | 21 3 | 22 48 | 24 34 | 26 19 |

Of the Use of the Ephemerides and Table of Minutes and Seconds, &c.

IN the Title-page of this Appendix it is declared that the four years Ephemerides are referred to the Apparent time and Meridian of London, and the Title of this last Table of Minutes and Seconds is plain of it self; yet I shall here add some farther Explanation of their Use by Precept and Example for finding the true place of the Sun within the prescribed limits of sixty years more, or if you please exactly enough for 120 years, as well past as to come, the difference never exceeding 2"

Consider first whether the year of our Lord in which you would know the Sun's true place be Leap-year, or the First, Second, or Third after it, which is easily known by dividing the same (or rather the residue thereof besides Hundreds) by Four, and if 0 remaineth it is Leap-year, but if 1, 2, or 3. shall remain, it is so many years after the Leap-year; and then, as you finde it, either Leap-year, or First, Second, or Third after, you shall alwayes enter that Ephemeris which hath the same Title, and proceed as in the following Examples.

1. Let the true place of \odot be required Anno 1718, Jan. 1. being Second after Leap-year.

In the 4 years Ephemerides, I seek for Second after Leap-year, and do find it answer to 1666 which I substract from 1718. and the residue is 52. years; then in the Table of Minutes and Seconds, &c. under 52 years and against Jan. 1. I find 22'. 50". which added to \odot 21° 41'. 21". the Place of \odot Anno 1666. Jan. 1. The Summe is \odot 22° 4'. 11". the true Place of \odot Anno 1718. Jan. 1. as was required.

2. For the Place of \odot Anno 1740. May the 5th. being Leap-year, and 72 years after 1668.

Anno 1668. which is also Leap-year, May 5. \odot in γ ————— 25°. 13'. 51".

For 6. years, by proportion between May 1. and 11. Add ————— 27. 35".

And for 12. years which makes it up 72. ————— 5. 31"

The Summe is the true place of \odot Anno 1740. May 5th. \odot 25°. 46'. 57".

3. and 4. For the Place of \odot for Time Past. Anno 1597 March 11. and Sept. 22. Past after Leap-year, and 65 years before 1665:

1665. Mar. 11. \odot in γ 1°. 23'. 54". } Sep. 22. \odot in α 9°. 39'. 15".

60. Sub. ————— 26. 57. } ————— 27. 0".

8. ————— 3. 36. } ————— 3. 36".

Summe Substract ————— 30. 33. } ————— 30. 36".

1597. Mar. 11. \odot in γ — 0. 53. 21. } Sep. 22. \odot in α — 9. 8. 39.

Aquat. Temp. Anno 1665. First after Leap-Year.

| Mon. | Janna. | Febru. | March. | April. | May. | June. |
|------|--------|--------|---------|----------|---------|--------|
| Day. | ' . // | ' . // | ' . // | ' . // | ' . // | ' . // |
| 1 | A. 5 2 | A 3 39 | S. 4 50 | S. 14 23 | S 15 30 | S 5 28 |
| 2 | 5 9 | 3 26 | 5 12 | 14 35 | 15 21 | 5 1 |
| 3 | 5 16 | 3 13 | 5 34 | 14 46 | 15 11 | 4 34 |
| 4 | 5 22 | 2 59 | 5 55 | 14 57 | 15 0 | 4 6 |
| 5 | 5 26 | 2 44 | 6 16 | 15 7 | 14 48 | 3 38 |
| 6 | 5 31 | 2 30 | 6 37 | 15 17 | 14 35 | 3 10 |
| 7 | 5 36 | 2 14 | 6 58 | 15 26 | 14 22 | 2 41 |
| 8 | 5 39 | 1 59 | 7 19 | 15 34 | 14 8 | 2 12 |
| 9 | 5 41 | 1 42 | 7 40 | 15 42 | 13 54 | 1 44 |
| 10 | 5 43 | 1 25 | 8 1 | 15 50 | 13 38 | 1 16 |
| 11 | 5 45 | 1 8 | 8 22 | 15 57 | 13 22 | 0 47 |
| 12 | 5 45 | 0 50 | 8 42 | 16 3 | 13 5 | 0 19 |
| 13 | 5 45 | 0 33 | 9 2 | 16 8 | 12 48 | A 0 10 |
| 14 | 5 44 | 0 14 | 9 22 | 16 12 | 12 30 | 0 39 |
| 15 | 5 43 | S. 0 5 | 9 42 | 16 15 | 12 11 | 1 8 |
| 16 | 5 41 | 0 23 | 10 2 | 16 18 | 11 52 | 1 36 |
| 17 | 5 38 | 0 43 | 10 20 | 16 20 | 11 32 | 2 4 |
| 18 | 5 35 | 1 3 | 10 39 | 16 22 | 11 11 | 2 32 |
| 19 | 5 31 | 1 23 | 10 59 | 16 22 | 10 49 | 3 0 |
| 20 | 5 26 | 1 43 | 11 17 | 16 22 | 10 27 | 3 27 |
| 21 | 5 21 | 2 3 | 11 35 | 16 22 | 10 5 | 3 54 |
| 22 | 5 15 | 2 23 | 11 52 | 16 20 | 9 42 | 4 22 |
| 23 | 5 8 | 2 44 | 12 9 | 16 17 | 9 19 | 4 49 |
| 24 | 5 0 | 3 5 | 12 27 | 16 14 | 8 55 | 5 16 |
| 25 | 4 52 | 3 26 | 12 43 | 16 10 | 8 30 | 5 42 |
| 26 | 4 43 | 3 47 | 12 58 | 16 5 | 8 5 | 6 8 |
| 27 | 4 35 | 4 8 | 13 13 | 16 0 | 7 40 | 6 33 |
| 28 | 4 25 | 4 29 | 13 28 | 15 54 | 7 15 | 6 58 |
| 29 | 4 14 | | 13 43 | 15 46 | 6 49 | 7 23 |
| 30 | 4 3 | | 13 57 | 15 39 | 6 22 | 7 47 |
| 31 | 3 52 | | 14 10 | | 5 55 | |

Aquat. Temp. Anno 1665. First after Leap-year.

| Mon. | July. | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|--------|---------|----------|--------|---------|---------|
| Day. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. |
| 1 | A 8 10 | A 15 8 | A 11 9 | A 1 58 | S 4 4 | S 1 15 |
| 2 | 8 33 | 15 10 | 10 53 | 1 41 | 4 8 | 1 3 |
| 3 | 8 56 | 15 12 | 10 37 | 1 23 | 4 10 | 0 50 |
| 4 | 9 18 | 15 12 | 10 20 | 1 5 | 4 11 | 0 37 |
| 5 | 9 40 | 15 12 | 10 3 | 0 48 | 4 12 | 0 23 |
| 6 | 10 1 | 15 11 | 9 46 | 0 32 | 4 12 | 0 10 |
| 7 | 10 22 | 15 9 | 9 28 | 0 15 | 4 12 | 0 4 |
| 8 | 10 41 | 15 7 | 9 10 | S 0 1 | 4 11 | 0 18 |
| 9 | 11 0 | 15 4 | 8 52 | 0 17 | 4 10 | 0 32 |
| 10 | 11 19 | 15 0 | 8 34 | 0 33 | 4 8 | 0 45 |
| 11 | 11 36 | 14 55 | 8 16 | 0 47 | 4 5 | 0 59 |
| 12 | 11 53 | 14 50 | 7 58 | 1 1 | 4 1 | 1 13 |
| 13 | 12 10 | 14 44 | 7 39 | 1 16 | 3 57 | 1 26 |
| 14 | 12 27 | 14 38 | 7 20 | 1 30 | 3 53 | 1 40 |
| 15 | 12 42 | 14 31 | 7 1 | 1 43 | 3 47 | 1 54 |
| 16 | 12 56 | 14 23 | 6 42 | 1 56 | 3 41 | 2 7 |
| 17 | 13 10 | 14 15 | 6 23 | 2 8 | 3 35 | 2 20 |
| 18 | 13 23 | 14 7 | 6 3 | 2 20 | 3 20 | 2 34 |
| 19 | 13 35 | 13 57 | 5 44 | 2 31 | 3 20 | 2 47 |
| 20 | 13 47 | 13 47 | 5 25 | 2 41 | 3 13 | 3 0 |
| 21 | 13 58 | 13 37 | 5 6 | 2 51 | 3 4 | 3 12 |
| 22 | 14 8 | 13 20 | 4 40 | 3 1 | 2 55 | 3 23 |
| 23 | 14 17 | 13 14 | 4 27 | 3 10 | 2 45 | 3 35 |
| 24 | 14 25 | 13 2 | 4 8 | 3 19 | 2 35 | 3 46 |
| 25 | 14 34 | 12 50 | 3 49 | 3 27 | 2 25 | 3 57 |
| 26 | 14 41 | 12 37 | 3 30 | 3 34 | 2 15 | 4 8 |
| 27 | 14 47 | 12 23 | 3 11 | 3 41 | 2 4 | 4 18 |
| 28 | 14 53 | 12 5 | 2 52 | 3 47 | 1 52 | 4 27 |
| 29 | 14 58 | 11 55 | 2 37 | 3 52 | 1 40 | 4 36 |
| 30 | 15 2 | 11 40 | 2 1 | 3 57 | 1 28 | 4 45 |
| 31 | 15 6 | 11 25 | | 4 0 | | 4 53 |

Æquat. Temp. Anno 1666. Second after Leap Year.

| <i>Mon.</i> | <i>Janua.</i> | <i>Febru.</i> | <i>March.</i> | <i>April.</i> | <i>May.</i> | <i>June.</i> |
|-------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <i>Day.</i> | <i>1. 11.</i> | <i>1. 11.</i> | <i>1. 11.</i> | <i>1. 11.</i> | <i>1. 11.</i> | <i>1. 11.</i> |
| 1 | A. 5 0 | A. 3 42 | S. 4 45 | S. 14 20 | S 15 32 | S 5 35 |
| 2 | 5 8 | 3 29 | 5 7 | 14 32 | 15 23 | 5 8 |
| 3 | 5 14 | 3 16 | 5 28 | 14 43 | 15 13 | 4 40 |
| 4 | 5 21 | 3 2 | 5 49 | 14 54 | 15 2 | 4 12 |
| 5 | 5 25 | 2 48 | 6 11 | 15 5 | 14 51 | 3 45 |
| 6 | 5 31 | 2 34 | 6 32 | 15 15 | 14 39 | 3 17 |
| 7 | 5 35 | 2 19 | 6 53 | 15 24 | 14 25 | 2 49 |
| 8 | 5 38 | 2 3 | 7 14 | 15 33 | 14 12 | 2 20 |
| 9 | 5 40 | 1 46 | 7 35 | 15 41 | 13 58 | 1 51 |
| 10 | 5 43 | 1 29 | 7 56 | 15 49 | 13 42 | 1 23 |
| 11 | 5 44 | 1 12 | 8 17 | 15 56 | 13 26 | 0 54 |
| 12 | 5 45 | 0 54 | 8 37 | 16 1 | 13 9 | 0 25 |
| 13 | 5 45 | 0 36 | 8 57 | 16 7 | 12 52 | A 0 3 |
| 14 | 5 45 | 0 18 | 9 17 | 16 11 | 12 34 | 0 32 |
| 15 | 5 44 | S. 0 0 | 9 37 | 16 14 | 12 16 | 1 1 |
| 16 | 5 42 | 0 19 | 9 57 | 16 17 | 11 57 | 1 29 |
| 17 | 5 39 | 0 38 | 10 16 | 16 20 | 11 37 | 1 57 |
| 18 | 5 36 | 0 58 | 10 35 | 16 21 | 11 16 | 2 25 |
| 19 | 5 32 | 1 18 | 10 54 | 16 22 | 10 55 | 2 53 |
| 20 | 5 27 | 1 38 | 11 13 | 16 22 | 10 33 | 3 21 |
| 21 | 5 22 | 1 58 | 11 31 | 16 22 | 10 10 | 3 48 |
| 22 | 5 16 | 2 18 | 11 49 | 16 21 | 9 47 | 4 16 |
| 23 | 5 10 | 2 38 | 12 5 | 16 18 | 9 24 | 4 43 |
| 24 | 5 3 | 2 59 | 12 22 | 16 15 | 9 1 | 5 9 |
| 25 | 4 55 | 3 20 | 12 39 | 16 11 | 8 36 | 5 35 |
| 26 | 4 46 | 3 42 | 12 54 | 16 6 | 8 12 | 6 1 |
| 27 | 4 38 | 4 3 | 13 10 | 16 1 | 7 47 | 6 27 |
| 28 | 4 27 | 4 24 | 13 25 | 15 58 | 7 21 | 6 52 |
| 29 | 4 16 | | 13 39 | 15 48 | 6 55 | 7 17 |
| 30 | 4 5 | | 13 53 | 15 41 | 6 29 | 7 41 |
| 31 | 3 54 | | 14 7 | | 6 2 | |

Aquat. Temp. Anno 1666. Second after Leap-year.

| Mon. | July | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|--------|---------|----------|--------|---------|---------|
| Day. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. |
| 1 | A 8 5 | A 15 8 | A 11 13 | A 2 2 | S 4 3 | S 1 18 |
| 2 | 8 28 | 15 10 | 10 57 | 1 45 | 4 6 | 1 6 |
| 3 | 8 51 | 15 11 | 10 41 | 1 27 | 4 9 | 0 53 |
| 4 | 9 13 | 15 12 | 10 24 | 1 9 | 4 11 | 0 40 |
| 5 | 9 35 | 15 12 | 10 7 | 0 52 | 4 12 | 0 26 |
| 6 | 9 56 | 15 11 | 9 50 | 0 36 | 4 12 | 0 13 |
| 7 | 10 17 | 15 9 | 9 33 | 0 19 | 4 12 | A 0 1 |
| 8 | 10 36 | 15 8 | 9 15 | 0 3 | 4 11 | 0 15 |
| 9 | 10 56 | 15 5 | 8 57 | S 0 13 | 4 10 | 0 29 |
| 10 | 11 14 | 15 1 | 8 39 | 0 28 | 4 8 | 0 42 |
| 11 | 11 32 | 14 57 | 8 21 | 0 43 | 4 5 | 0 56 |
| 12 | 11 49 | 14 52 | 8 2 | 0 58 | 4 2 | 1 10 |
| 13 | 12 6 | 14 46 | 7 43 | 1 12 | 3 58 | 1 23 |
| 14 | 12 23 | 14 40 | 7 24 | 1 27 | 3 54 | 1 37 |
| 15 | 12 39 | 14 33 | 7 5 | 1 40 | 3 49 | 1 51 |
| 16 | 12 53 | 14 25 | 6 46 | 1 53 | 3 43 | 2 4 |
| 17 | 13 6 | 14 17 | 6 27 | 2 5 | 3 36 | 2 17 |
| 18 | 13 20 | 14 9 | 6 8 | 2 17 | 3 30 | 2 31 |
| 19 | 13 35 | 14 0 | 5 48 | 2 28 | 3 22 | 2 44 |
| 20 | 13 4 | 13 50 | 5 29 | 2 39 | 3 14 | 2 57 |
| 21 | 13 55 | 13 40 | 5 10 | 2 49 | 3 6 | 2 9 |
| 22 | 14 5 | 13 29 | 4 51 | 2 58 | 2 57 | 3 21 |
| 23 | 14 15 | 13 17 | 4 32 | 3 8 | 2 48 | 3 33 |
| 24 | 14 24 | 13 5 | 4 13 | 2 17 | 2 38 | 3 44 |
| 25 | 14 32 | 12 53 | 3 54 | 3 25 | 2 28 | 3 55 |
| 26 | 14 40 | 12 40 | 3 35 | 3 32 | 2 17 | 4 5 |
| 27 | 14 46 | 12 26 | 3 16 | 3 39 | 2 6 | 4 15 |
| 28 | 14 52 | 12 12 | 2 57 | 3 45 | 1 55 | 4 25 |
| 29 | 14 57 | 11 58 | 2 39 | 3 50 | 1 43 | 4 34 |
| 30 | 15 1 | 11 44 | 2 20 | 3 56 | 1 31 | 4 43 |
| 31 | 15 5 | 11 29 | | 4 0 | | 4 53 |

Æquat. Temp. Anno 1667. Third after Leap-Year.

| Mon. | Janua. | Febru. | March. | April. | May. | June. |
|------|---------|---------|---------|----------|---------|--------|
| Day. | ' . // | ' . // | ' . // | ' . // | ' . // | ' . // |
| 1 | A. 4 59 | A 3 45 | S. 4 40 | S. 14 17 | S 15 35 | S 5 41 |
| 2 | 5 6 | 3 33 | 5 2 | 14 29 | 15 26 | 5 15 |
| 3 | 5 13 | 3 20 | 5 23 | 14 41 | 15 16 | 4 47 |
| 4 | 5 19 | 3 6 | 5 44 | 14 52 | 15 5 | 4 19 |
| 5 | 5 25 | 2 52 | 6 6 | 15 3 | 14 54 | 3 51 |
| 6 | 5 30 | 2 37 | 6 27 | 15 13 | 14 42 | 3 24 |
| 7 | 5 34 | 2 22 | 6 48 | 15 22 | 14 29 | 2 56 |
| 8 | 5 37 | 2 6 | 7 9 | 15 31 | 14 15 | 2 27 |
| 9 | 5 40 | 1 50 | 7 30 | 15 39 | 14 1 | 1 58 |
| 10 | 5 42 | 1 33 | 7 51 | 15 47 | 13 46 | 1 30 |
| 11 | 5 44 | 1 16 | 8 12 | 15 54 | 13 30 | 1 1 |
| 12 | 5 45 | 0 58 | 8 32 | 16 0 | 13 14 | 0 32 |
| 13 | 5 45 | 0 41 | 8 53 | 16 5 | 12 56 | 0 4 |
| 14 | 5 45 | 0 23 | 9 12 | 16 10 | 12 39 | A 0 24 |
| 15 | 5 44 | 0 4 | 9 32 | 16 14 | 12 20 | 0 53 |
| 16 | 5 42 | S. 0 14 | 9 52 | 16 17 | 12 2 | 1 22 |
| 17 | 5 40 | 0 33 | 10 11 | 16 20 | 11 42 | 1 50 |
| 18 | 5 37 | 0 53 | 10 30 | 16 21 | 11 21 | 2 18 |
| 19 | 5 33 | 1 13 | 10 49 | 16 22 | 11 0 | 2 46 |
| 20 | 5 29 | 1 33 | 11 8 | 16 22 | 10 39 | 3 14 |
| 21 | 5 24 | 1 53 | 11 26 | 16 22 | 10 16 | 3 41 |
| 22 | 5 18 | 2 13 | 11 44 | 16 21 | 9 53 | 4 9 |
| 23 | 5 11 | 2 33 | 12 1 | 16 18 | 9 30 | 4 36 |
| 24 | 5 4 | 2 54 | 12 18 | 16 15 | 9 6 | 5 3 |
| 25 | 4 57 | 3 15 | 12 35 | 16 12 | 8 43 | 5 29 |
| 26 | 4 48 | 3 36 | 12 51 | 16 8 | 8 18 | 5 55 |
| 27 | 4 40 | 3 58 | 13 7 | 16 3 | 7 53 | 6 21 |
| 28 | 4 29 | 4 19 | 13 21 | 15 57 | 7 27 | 6 46 |
| 29 | 4 19 | | 13 35 | 15 50 | 7 2 | 7 11 |
| 30 | 4 8 | | 13 50 | 15 43 | 6 35 | 7 35 |
| 31 | 3 57 | | 14 4 | | 6 8 | |

Æquat. Temp. Anno 1657. Third after Leap-year.

| Mon. | July. | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|--------|---------|----------|--------|---------|---------|
| Day. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. |
| 1 | A 7 59 | A 15 7 | A 11 17 | A 2 7 | S 4 2 | S 1 21 |
| 2 | 8 22 | 15 9 | 11 1 | 1 49 | 4 6 | 1 9 |
| 3 | 8 45 | 15 11 | 10 4 | 1 32 | 4 9 | 0 56 |
| 4 | 9 8 | 15 12 | 10 26 | 1 14 | 4 10 | 0 43 |
| 5 | 9 29 | 15 12 | 10 11 | 0 56 | 4 11 | 0 30 |
| 6 | 9 50 | 15 11 | 9 54 | 0 39 | 4 12 | 0 16 |
| 7 | 10 11 | 15 10 | 9 37 | 0 23 | 4 12 | 0 3 |
| 8 | 10 31 | 15 9 | 9 19 | 0 7 | 4 12 | A 0 11 |
| 9 | 10 51 | 15 6 | 9 1 | S 0 9 | 4 11 | 0 25 |
| 10 | 11 10 | 15 2 | 8 43 | 0 25 | 4 9 | 0 39 |
| 11 | 11 28 | 14 58 | 8 25 | 0 40 | 4 6 | 0 53 |
| 12 | 11 45 | 14 53 | 8 7 | 0 55 | 4 3 | 1 7 |
| 13 | 12 2 | 14 47 | 7 48 | 1 9 | 3 59 | 1 20 |
| 14 | 12 19 | 14 41 | 7 29 | 1 23 | 3 55 | 1 34 |
| 15 | 12 34 | 14 35 | 7 10 | 1 36 | 3 50 | 1 48 |
| 16 | 12 49 | 14 27 | 6 51 | 1 49 | 3 44 | 2 1 |
| 17 | 13 3 | 14 19 | 6 32 | 2 2 | 3 38 | 2 14 |
| 18 | 13 17 | 14 11 | 6 12 | 2 14 | 3 31 | 2 27 |
| 19 | 13 29 | 14 2 | 5 53 | 2 25 | 3 24 | 2 41 |
| 20 | 13 41 | 13 52 | 5 34 | 2 36 | 3 16 | 2 54 |
| 21 | 13 53 | 13 42 | 5 15 | 2 47 | 3 8 | 3 6 |
| 22 | 14 4 | 13 31 | 4 56 | 2 57 | 2 59 | 3 19 |
| 23 | 14 13 | 13 20 | 4 37 | 3 6 | 2 50 | 3 30 |
| 24 | 14 21 | 13 8 | 4 18 | 3 15 | 2 40 | 3 1 |
| 25 | 14 30 | 12 56 | 3 58 | 3 23 | 2 30 | 3 12 |
| 26 | 14 38 | 12 43 | 3 39 | 3 30 | 2 20 | 4 3 |
| 27 | 14 44 | 12 29 | 3 21 | 3 37 | 2 9 | 4 13 |
| 28 | 14 51 | 12 16 | 3 2 | 3 44 | 1 57 | 4 27 |
| 29 | 14 56 | 12 2 | 2 43 | 3 49 | 1 46 | 4 32 |
| 30 | 15 0 | 11 47 | 2 25 | 3 54 | 1 34 | 4 41 |
| 31 | 15 4 | 11 32 | | 3 59 | | 4 50 |

Æquat. Temp. Anno 1668. Leap-Year.

| Mon. | Janua. | Febru. | March. | April. | May. | June. |
|------|---------|---------|---------|----------|---------|--------|
| Day. | I. II. | I. II. | I. II. | I. II. | I. II. | I. II. |
| 1 | A. 4 57 | A 3 48 | S. 4 56 | S. 14 27 | S 15 28 | S 5 22 |
| 2 | 5 4 | 3 36 | 5 18 | 14 38 | 15 18 | 4 54 |
| 3 | 5 11 | 3 23 | 5 39 | 14 49 | 15 8 | 4 26 |
| 4 | 5 18 | 3 9 | 6 1 | 15 0 | 14 57 | 3 58 |
| 5 | 5 24 | 2 55 | 6 22 | 15 10 | 14 45 | 3 30 |
| 6 | 5 29 | 2 41 | 6 43 | 15 20 | 14 32 | 3 2 |
| 7 | 5 33 | 2 26 | 7 4 | 15 29 | 14 18 | 2 34 |
| 8 | 5 36 | 2 10 | 7 25 | 15 37 | 14 5 | 2 5 |
| 9 | 5 39 | 1 54 | 7 46 | 15 45 | 13 50 | 1 37 |
| 10 | 5 42 | 1 38 | 8 7 | 15 53 | 13 34 | 1 8 |
| 11 | 5 44 | 1 21 | 8 27 | 15 59 | 13 18 | 0 40 |
| 12 | 5 45 | 1 3 | 8 48 | 16 4 | 13 1 | 0 11 |
| 13 | 5 45 | 0 45 | 9 8 | 16 9 | 12 43 | A 0 17 |
| 14 | 5 45 | 0 27 | 9 28 | 16 13 | 12 25 | 0 46 |
| 15 | 5 44 | 0 9 | 9 48 | 16 16 | 12 6 | 1 15 |
| 16 | 5 43 | S. 0 10 | 10 7 | 16 19 | 11 47 | 1 43 |
| 17 | 5 40 | 0 29 | 10 26 | 16 21 | 11 26 | 2 11 |
| 18 | 5 37 | 0 48 | 10 44 | 16 22 | 11 5 | 2 39 |
| 19 | 5 34 | 1 8 | 11 4 | 16 22 | 10 44 | 3 7 |
| 20 | 5 30 | 1 28 | 11 22 | 16 22 | 10 22 | 3 35 |
| 21 | 5 25 | 1 48 | 11 39 | 16 21 | 9 59 | 4 2 |
| 22 | 5 20 | 2 9 | 11 56 | 16 19 | 9 36 | 4 30 |
| 23 | 5 13 | 2 29 | 12 14 | 16 16 | 9 12 | 4 56 |
| 24 | 5 6 | 2 49 | 12 31 | 16 13 | 8 48 | 5 22 |
| 25 | 4 59 | 3 10 | 12 47 | 16 9 | 8 24 | 5 48 |
| 26 | 4 50 | 3 31 | 13 2 | 16 4 | 7 59 | 6 14 |
| 27 | 4 42 | 3 52 | 13 17 | 15 59 | 7 33 | 6 40 |
| 28 | 4 32 | 4 14 | 13 32 | 15 53 | 7 8 | 7 5 |
| 29 | 4 22 | 4 35 | 13 46 | 15 45 | 6 42 | 7 29 |
| 30 | 4 11 | | 14 0 | 15 37 | 6 15 | 7 53 |
| 31 | 4 0 | | 14 14 | | 5 4 | |

Equal.Temp. Anno 1668. Leap-year.

| Mon. | July. | August. | Septemb. | Octob. | Novemb. | Decemb. |
|------|--------|---------|----------|--------|---------|---------|
| Day. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. | 1. 11. |
| 1 | A 8 16 | A 15 9 | A 11 4 | A 1 54 | S 4 5 | S 1 12 |
| 2 | 8 39 | 15 11 | 10 49 | 1 36 | 4 8 | 0 59 |
| 3 | 9 2 | 15 12 | 10 33 | 1 18 | 4 10 | 0 46 |
| 4 | 9 24 | 15 12 | 10 16 | 1 0 | 4 11 | 0 33 |
| 5 | 9 45 | 15 12 | 9 59 | 0 44 | 4 12 | 0 19 |
| 6 | 10 6 | 15 10 | 9 41 | 0 27 | 4 12 | 0 6 |
| 7 | 10 27 | 15 9 | 9 23 | 0 11 | 4 12 | A 0 8 |
| 8 | 10 46 | 15 6 | 9 5 | S 0 5 | 4 11 | 0 22 |
| 9 | 11 5 | 15 3 | 8 48 | 0 21 | 4 9 | 0 36 |
| 10 | 11 23 | 14 59 | 8 29 | 0 36 | 4 7 | 0 49 |
| 11 | 11 41 | 14 54 | 8 11 | 0 51 | 4 3 | 1 3 |
| 12 | 11 58 | 14 49 | 7 52 | 1 5 | 4 0 | 1 17 |
| 13 | 12 15 | 14 43 | 7 35 | 1 20 | 3 56 | 1 31 |
| 14 | 12 31 | 14 36 | 7 14 | 1 33 | 3 51 | 1 44 |
| 15 | 12 45 | 14 29 | 6 56 | 1 46 | 3 45 | 1 58 |
| 16 | 12 59 | 14 21 | 6 37 | 1 59 | 3 40 | 2 11 |
| 17 | 13 13 | 14 13 | 6 17 | 2 11 | 3 33 | 2 24 |
| 18 | 13 26 | 14 4 | 5 58 | 2 23 | 3 26 | 2 38 |
| 19 | 13 38 | 13 54 | 5 39 | 2 34 | 3 18 | 2 51 |
| 20 | 13 50 | 13 44 | 5 20 | 2 44 | 3 10 | 3 3 |
| 21 | 14 1 | 13 34 | 5 0 | 2 54 | 3 1 | 3 15 |
| 22 | 14 11 | 13 23 | 4 41 | 3 3 | 2 52 | 3 27 |
| 23 | 14 18 | 13 11 | 4 22 | 3 12 | 2 42 | 3 38 |
| 24 | 14 28 | 12 59 | 4 3 | 3 21 | 2 32 | 3 49 |
| 25 | 14 36 | 12 46 | 3 44 | 3 29 | 2 22 | 4 0 |
| 26 | 14 43 | 12 33 | 3 25 | 3 36 | 2 11 | 4 11 |
| 27 | 14 49 | 12 19 | 3 6 | 3 43 | 2 0 | 4 20 |
| 28 | 14 54 | 12 5 | 2 47 | 3 48 | 1 48 | 4 30 |
| 29 | 14 58 | 11 51 | 2 29 | 3 53 | 1 37 | 4 39 |
| 30 | 15 3 | 11 46 | 2 11 | 3 55 | 1 24 | 4 48 |
| 31 | 15 7 | 11 20 | | 4 1 | | 4 55 |

At Table of the Difference of Time in Seconds, to be Applied for Years to Come according to the Titles on the right hand, but for Years Past Contrariwise.

| Year | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | 56 | 60 | |
|--------|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| M.O. | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " | " |
| Jan. 1 | 1 | 1 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | 7 | 8 | 8 | 9 | 10 | A |
| 11 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | |
| 21 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | |
| Feb. 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | S |
| 11 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | |
| 21 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | |
| Mar. 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 6 | 7 | 7 | |
| 11 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 7 | 8 | 8 | |
| 21 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | 8 | |
| Apr. 1 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 | 6 | 7 | 7 | |
| 11 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | |
| 21 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | |
| May 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | A |
| 11 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | |
| 21 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | |
| Jun. 1 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | |
| 11 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 7 | |
| 21 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | |
| Jul. 1 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | |
| 11 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | S |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Aug. 1 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | |
| 11 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | |
| 21 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 7 | 7 | 8 | |
| Sep. 1 | 1 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 6 | 7 | 7 | 7 | 8 | 8 | |
| 11 | 1 | 1 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | 7 | 6 | 6 | 7 | 9 | 10 |
| 21 | 1 | 1 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 7 | 8 | |
| Oct. 1 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 | |
| 11 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 5 | |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Nov. 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | A |
| 11 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 7 | |
| 21 | 1 | 1 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | 7 | 7 | 8 | 9 | 10 | |
| Dec. 1 | 1 | 2 | 2 | 3 | 4 | 5 | 5 | 6 | 7 | 8 | 8 | 9 | 9 | 10 | 11 | |
| 11 | 1 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 12 | |
| 21 | 1 | 2 | 2 | 3 | 4 | 5 | 5 | 6 | 7 | 8 | 9 | 9 | 10 | 11 | 12 | |

*Of the Use of the Tables of Equation of Time for the years 1665,
1666, 1667, 1668, &c.*

NOte first that A shews the Equation to be Added, but S substracted, to or from the Apparent Time, that so it may be made Equal. But to reduce the Equal Time to the Apparent, the Contrary Title is to be applied.
Example.

1. *Anno 1665.* the first of *January* just at Noon, in the Meridian of *London*; I would know the Equation of Time; and under the Title of the year and month, against the day proposed, I finde A $5^{\circ}.21'$. Therefore the Apparent Time being then $0^h.0'.0''$. the Equal Time is $0^h.5'.2''$. To which Time, the true place of the Sun is computed by my Tables of *Ast. Car.* in $\nu 21^{\circ}.56'12''$. as in the beginning of the Ephemerides; and the like is to be observed throughout the whole four years.

2. Again in the same year 1665. I finde that in the Meridian of the 5th. day of *April* the Equation is S. $15'7''$ but to the following Midnight, that is *April 5 11^h 12^m*. it will be found by proportion $15'12''$ to be Substracted from the Apparent Time, but contrarily added to the Equal.

For the Equation of Time for years to Come after, or Past before the Years 1665, 1666, 1667 and 1668.

First see whether the year in which the Equation is required be Leap-year; or the First Second or Third after it, and accordingly under the same Title in the year 1665, 1666, 1667 or 1668, finde Equation; And after that, in this last Table, with the Day of the Month and the intervall of yeares, you shall have the Difference, which for years to Come is to be Added or Substracted to or from the Apparent Time, as the Titles A or S direct, but for years past Contrarily.

Then if the Equation and Difference are both to be Added or both Substracted, their Summe, but otherwise their Difference is the true Equation of Time.
Example.

1. For the Equation of Time *Anno 1726. Jan. 1.* Second after Leap-year, and 60. years after 1666.

I finde *Anno. 1665. Jan. 1.* A. $5^{\circ}.0'$. and the Diff. for 60 years to Come. A. $10''$. The Sum is A. $5^{\circ}.10''$. the true Equation of Time *Anno. 1726. Jan. 1.*

2. For the Equation of Time *Anno 1597. Mar. 14.* First after Leap-year, and 68 years before. 1665,

The Equation for 1665. Mar. 14 is S. $9^{\circ}.22''$. The Diff. for 68 years past. A. $9'$. Difference is S. $9^{\circ}.13''$. the True Equation of Time *Anno 1597. Mar. 14.*

The Places of 22 Fixt-Stars, rectified by *Alfuphius* to the Year of Christ 936 Compleat, and (except onely *Cor* Ω in *Ast. Philolaica* lib. 5. pag. 22.) not hitherto published. Deduced from an Arabick Manuscript at Oxford in the Study of the Learned Dr *Pocock*, and procured me by my worthy friend Dr. *J. Bua Childrey*.

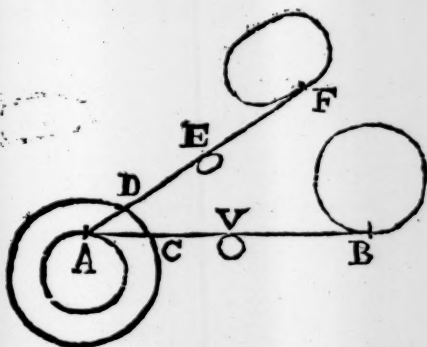
| <i>Nomina Stellarum.</i> | Longitudo. | | | Latitudo. | | | Mag. s. nitid. | | | Long. ex Ast. Car. | | | Differ. | | |
|------------------------------------|------------|----|----|-----------|----|----|----------------|----------|----|--------------------|---|----|---------|--|--|
| | s | o | ' | o | ' | '' | s | o | ' | s | o | ' | | | |
| <i>Prima Cornu</i> γ . | γ | 19 | 22 | B | 7 | 20 | 3 | γ | 18 | 45 | — | 57 | | | |
| <i>Lucida Pleiadum.</i> | δ | 18 | 20 | B | 3 | 40 | 4 | δ | 15 | 32 | — | 50 | | | |
| <i>Aldbaran.</i> | δ | 20 | 22 | A | 5 | 10 | 1 | δ | 25 | 20 | — | 2 | | | |
| <i>Rigel.</i> | π | 2 | 52 | A | 31 | 30 | 1 | π | 2 | 25 | — | 7 | | | |
| <i>Capella.</i> | Π | 7 | 40 | B | 22 | 30 | 1 | Π | 7 | 24 | — | 18 | | | |
| <i>Lucida Pedis</i> Π . | Π | 20 | 50 | A | 1 | 15 | 3 | Π | 20 | 52 | — | 0 | | | |
| <i>Lucida altera Pedis</i> Π . | Π | 22 | 52 | A | 3 | 30 | 4 | Π | 22 | 22 | — | 30 | | | |
| <i>Sirius.</i> | σ | 0 | 22 | A | 39 | 10 | 1 | Π | 29 | 43 | — | 39 | | | |
| <i>Castor.</i> | σ | 6 | 2 | B | 9 | 40 | 2 | σ | 5 | 49 | — | 13 | | | |
| <i>Pollux.</i> (* vel 32'. | σ | 9* | 22 | B | 6 | 15 | 2 | σ | 8 | 51 | — | 31 | V. 41 | | |
| <i>Procyon.</i> | σ | 11 | 52 | A | 16 | 10 | 1 | σ | 11 | 26 | — | 26 | | | |
| <i>Cor</i> Ω . | Ω | 15 | 12 | B | 0 | 10 | 1 | Ω | 15 | 25 | + | 13 | | | |
| <i>Canda</i> Ω . | π | 7 | 12 | B | 11 | 50 | 2 | π | 7 | 11 | — | 1 | | | |
| <i>Azimach.</i> | π | 9 | 22 | A | 2 | 0 | 1 | π | 9 | 24 | + | 2 | | | |
| <i>Arcturus.</i> | π | 9 | 42 | B | 31 | 30 | 1 | π | 9 | 47 | + | 5 | | | |
| <i>Lanx Australis.</i> | m | 0 | 42 | B | 0 | 40 | 3 | m | 0 | 39 | — | 3 | | | |
| <i>Lanx Borealis.</i> | m | 4 | 50 | B | 8 | 50 | 3 | m | 4 | 5 | + | 4 | | | |
| <i>Lucida frontis</i> m . | m | 19 | 2 | B | 1 | 0 | 2 | m | 18 | 44 | — | 18 | | | |
| <i>Antares.</i> <i>Cor</i> m . | m | 25 | 21 | A | 4 | 0 | 2 | m | 25 | 21 | — | 1 | | | |
| <i>Lyra.</i> | ν | 0 | 2 | B | 62 | 0 | 1 | ν | 0 | 51 | + | 49 | | | |
| <i>Cor Aquila.</i> | ν | 16 | 12 | B | 29 | 10 | 2 | ν | 17 | 17 | + | 45 | | | |
| <i>Extrema ala Pegasi.</i> | χ | 24 | 52 | B | 12 | 30 | 2 | χ | 24 | 46 | — | 6 | | | |

These came first to my hands Anno 1663. and are all the Fixt-Stars Places I have yet seen of the Catalogue of *Alfuphius*, which being of greater Antiquity then any other extant since the time of *Ptolomy*, and following so soon after *Albatagnius* his Observations of both *Aequinoxes* mentioned in my *Ast. Car.* pag. 95. ought so much the more to be valued,

A Monitum to Mr. Vincent Wing?

MR. *Vincent Wing*, in the last page but one of his Almanack for 1662: having published an Erroneous discourse about Parallax and Refraction; I (being willing to prevent his farther discredit) gave him this Caution, that some of his Suppositions therein were groundless and wide of Truth: But since, in his next for 1664. he hath under the title of *Monitum ad Astronomos* enlarged and inartificially endeavoured to defend his former Errors.

Therefore first, for a warning to himself and to remove some of his stumbling blocks out of the way of *Tyroes*, I propose this brief and plain demonstration concerning Refractions.



Let A denote the eye of the Observator on the face of the Earth; the outermost Circle CD the extream limit of the Atmosphere; AB a right line touching the circumference of the Earth in A, the upper edge of *Venus Mercury* or the Moon in V, and the lower edge of the Sun in B.

I say the line of Vision BV, passeth directly towards the eye in A, until it falleth obliquely on the Atmosphere in C, whereby it is refracted upward, as from C to D, the lower edge of the Sun appearing as in F, and the upper edge of *Venus*, &c. in E, and do both present themselves to the Eye as in the right line FA: And hence the Refractions of B and V are exactly the same, and equal to the Angle FAB: So that in this case, *Venus Mercury* or the Moon cannot possibly Eclipse the Sun.

Moreover, let us suppose the upper edge of *Venus Mercury* or the Moon below the right line AB, or let the Planet be otherwise not onely wide of Eclipsing the Sun but free from his Contact, and grant as great a Refraction as any man can desire; I say that hence the space between them can onely be diminished (in like manner as the Suns Vertical Diameter in his rising or

D

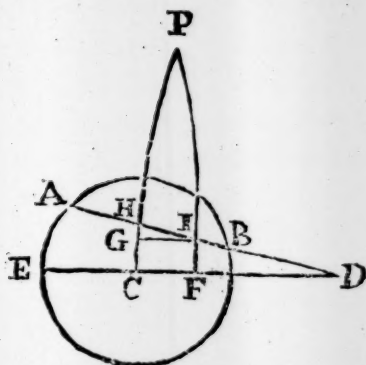
setting

setting seemeth less (then his Horizontal) but no Contact, and much less any Eclipse hereby caused, as Mr. *Wing* most fondly imagineth.

2. Whereas he talks of rashness, and of new moulding Astronomy by one Observation; If he intends hereby to lay his aspersions upon me or others that will not till he can shew some reason for it submit to his (as he supposeth) better judgement; I say that by the 12th. page and other places of my *Ast. Car.* they will plainly appear as groundless and as wide of truth as those of that scandalous flagitious *I.H.* with the false and bochit calculations lent him (for a Supplement to that spurious Book of his entituled *The Holy Guide*) by *I. G. Mr. Lillyes* quondam Taylor; or as the Calumniation relating to the former, with the sutable story which the said *I. G.* hath among other absurdities in his Almanack for 1664. (viz.) That the *Gregorian account*, taking its name from Pope Gregory the 13th. was established by the Counsel of Nice, Anno 324. That was about 1200. years before the said Pope Gregory was born.

3. That *Tycho* ever found or cou'd finde, by any real Observations of the Altitudes of the Sun when he was freed from Refraction, any such Parallax as Mr. *Wing* would have granted him, is utterly denied, nor is he any way able to prove it; neither do the opinions of those Authors which he there mentioneth, or of any other more ancient, make any thing at all to his purpose; the smalness of the Suns Parallax being otherwise undenyably proved by the most certain Observations of *Tycho*, *Kepler*, *Horrox* and others, as in my *Ast. Car.* pag. 12, 61. and 62. and also by the Observations of divers others since, and by Lunar Eclipses, as in convenient time and place I can easily make it appear.

4. But then in the end of the said *Monitum ad Astronomos*, he seems to intimate to his Reader, that in his *Astronomia Britannica* (not yet extant) he hath confuted the Fixation of the Aphelions of the Primary Planets; To which I answer, let him out with it as soone as he pleaseth, and once more try if the Heavens or any man deserving the name of an Astronomer will be baffled by him: And in the mean time, that he may perceive a little better how well he understands his own Fundamentals, I shall here shew him how to Calculate the Angle of the visible way of *Mercury* with the Ecliptick when he passeth between the Earth and the Sun.



Let C represent the Center of the Sun, E A B his visible Periphery, E D a part of the Ecliptick, P the Pole thereof; A D a part of the way of *Mercury* in respect of the Earths Center, C H his Latitude at the true Conjunction: And to some time after the true Conjunction (as one, two or three hours, &c.) let F I be his Latitude, and C F his motion from the Sun in Longitude.

Then first (Mr *Wing*) In the Triangle H P I; by the Complements of Lat. H P and P I, with the included Angle H P I whose measure is C F, finde P I H.

2. In the Triangle D F I, Right Angled at F, by the Angle D I F equal to P I H, and the side F I, finde I D F.

Or thus more easily;

In the Triangle H G I Right Angled at G, by the side G I supposed equal to C F, and G H the difference of the two forementioned Latitudes, you may finde H I G, which differs not sensibly from I D F:

And when you have so done, I hope you will begin to be sensible of your own folly which in this very particular you have now three times demonstrated in print, first before your Ephemeris for 1661. where intending to Compute the said Angle at D, but encountering a *Windmill* for a *Giant*, you are beaten out of almost 7 degrees in 10; Secondly on the like score, before your Ephemeris for 1664, you lose 5 degrees in 8; and thirdly the same again most learnedly in Latine, in your Almanack for 1664, where one would have thought you had said enough besides in English: The false and idle accusation which in imitation of your (worthy as you term him) friend I. G. you have added in the 4th. and 5th. page of the last sheet of your Almanack for 1665. deserve no more answer in this place, and indeed the ignorance you there owne is most justly yours:

But in any case let your next *Monitum ad Astonomos* be somewhat more to the purpose, least you hear farther as well from others as from me : Carry your self Civilly Mr. *Wing* ; Amend, and farewell.

An Advertisement concerning a New Hypothesis.

IN this year 1664, there came forth a small Treatise of a Learned German, Entituled *Nicholai Mercatoris Hypothesis Astronomica Nova, &c.*

It is a Circular *Æquant*, the Center thereof cutting the distance between the Foci of the Ellipsis according to Extreme and Mean Proportion : Such an *Æquant*, with the like section of the Eccentricity may be seen in my *Lunar Theory in Ast. Car.* and how both these might be applied to the Primary Planets, I have long since, and before I knew of any such intention of his, intimated to Mr. *Robert Anderson*, a person well known among able Mathematicians. I should be very unwilling to robbe Mr. *N.M.* or any man else of any part of his proper Invention, but where he mentioneth the Fixation of the Aphelions and Nodes, methinkes he should not altogether have forgotten his friend *T.S.*

The Hypothesis is good ; but by reason that he hath taken the Argument of Latitude erroneously throughout all his Calculations, they will not (if rectified) agree so well with the Observations of *Mars* as he supposeth : Neither will the Phenomena of the Moon and Eclipses of the Luminaries admit of the inversion of the second part of my Equation of Time.

An Explanation of the Harmony of Magnitudes and Position of Aphelions mentioned in Ast. Car. page 62.

1. *Of the Primary Planets Magnitudes.*

| | |
|------------------------|---|
| The More Attendants. | } Compared according to their Number and Proportion, are Testimonies of the Greater Planet. |
| The Greater Orbe. | |
| The Lesser Inequality. | |

2. The more Attendants are properly assigned to the greater habitable Globes

Globes; For the 4 Satellites of *Jupiter*, with the Ring and Moon of *Saturn*, are doubtless of the like benefit unto them as the Moon to the Earth.

2. The Greater Orbe to contain the Greater Planet, is in it self consentaneous to Reason, and so adjudged by most experienced Astronomers.

3. The Lesser Inequality is also a Testimony of the Greater Planet: For the Inequalities of the Primary Planets are probably caused by the Magnetisme or impulse of the Vortices of Fixt-Stars, to which the Greater and more ponderous Bodies are experimentally the less subject.

So if we regard as well the Proportion as Number of Testimonies, *Jupiter* or *Saturn* are much greater then any of the other Primary Planets; Greater then ♀ or ♂ by all the three Testimoneis, and Greater then ♀ or the Earth by the first and Second.

♂ is Greater then ♀, by the First and Third.

♂ is Greater then ♀, by the Second and Third.

The Earth is Greater then { ♀, by all the Three Testimonies.
♂, by the First and Third.
♀, by the First and Second.

♀ is Greater then { ♀, by the Second and Third.
♂, by the excess of the Third more then the Second; For though *Mars* hath the greater Orbe, yet *Venus* hath much the lesser Inequality.

And thus, by Collection of Testimonies, the Proportion of the Magnitudes of the six Primary Planets may be found to agree with more exact Observations, as in *Ast. Car. pag. 12. 61. 62 &c.* All which are sufficient demonstrations of our Horizontal Parallax of ☉; Except onely to such as are either wilfully or altogether ignorant.

2. Of the Aphelions.

The Fixt Positions and Distances of the Primary Planets Aphelions, are Correspondent to the Sympathy and Antipathy of their Natures.

So the Aphelion of ♀ (a Planet singular in Magnitude and Clarity) is placed by it self.

The Aphelions of ♀ and the Earth, and also of ♀ and ♀ are (according to their similitude and Sympathy) near together.

But

But the Aphelions of γ and η , are (answerable to their different Colour and Antipathy) not farre from Opposition.

And hence, the Fixt Sidereal Longitudes of the Aphelions seem no way contradictory to Reason; Touching which, the Ingenious and Astronomical Reader may (for his due satisfaction, till a farther occasion be offered) Consider and Compare the few words in *1st. Car. pag. 23. and 56.* with the many select Observations in other places, especially from pag. 104. to 119.

The Observations of Three Lunar Eclipses, as they were faithfully and most diligently made at London, Anno 1663. and 1664. The first at Gresham Colledge by several expert persons of good note there; The second by Mr. Henry Sutton, Mr. Robert Anderson and others in Thredneedle-street; The third by Mr. Joseph Moxon, Mr. R. Anderson and my self in Cornhill, I being present also at the other two.

The Observation of the Eclipse of the Moon, made at Gresham Colledge Anno 1663, February the 12th. in the morning

b. m.

- | | | |
|-------------------------|---|--|
| The Appa- rent Time. | { | 1. 32. The beginning of the Eclipse, as near as the Observators could gather, the air being something clouded. |
| | | 2. 48. Near this time, or as some observed a little sooner, the horns of the illuminate part of the Moon were in equal a'titude. |
| | | Afterwards the Digits Eclipsed at most were much about 9. |
| | | 3. 12. The quantity of the Eclipse was supposed to decrease. |
| | | 3. 50. In clear aire, the Eclipsed Digits were determined just 6, or half the Diameter of the Moon. |

And not long after, Clouds impeded any farther Observation.

The

*The Observation of the Not Total Eclipse of the Moon Anno 1663.
August the 8th. P M. in Thredneedle-street*

| The Apparent Time | <i>h. m.</i> | |
|-------------------|--------------|--|
| | 8. | 3. The horns caused by the Eclipse were unequal altitude, and the Digits Eclipsed 11 feré. |
| | 9. | 17. The Eclipsed Digits were 7, or a little more. |
| | 9. | 41. The Digits were about 3 and an half. |
| | 9. | 58. The just End of the Eclipse, accurately observed. |

*The Observation of the Total Eclipse of the Moon Anno 1664.
the night following the 27th of July. in Corn-hill*

| T. App. ho. min. | Digits Eclipsed. | Alt. Vis. |
|------------------|------------------|------------------|
| 9. 58. ——— | 3. Incef. | Centr. ☾ 16° 0/ |
| 12. 17. ——— | 11. Decref. | Capellæ. 23. 45. |
| 12. 26. ——— | 10 paulo plus. | ———— 24. 45. |
| 12. 31. ——— | 9½. vel 9¼. | ———— 25. 15. |
| 13. 6. ——— | 3. ——— | ———— 29. 30. |
| 13. 23. Cir. ——— | Finis Ecl. | ———— ——— |
| 13. 26. ——— | ———— | ———— 32. 0. |

Of these two last mentioned Lunar Eclipses I have also the Observations of *Hevelius* at *Dantzick*, agreeing sufficiently as well in time as quantity with what is here published, that chiefly of *August* the 8th. with the Eclipse of ☉ Jan. 18. 166½, observed by him there and others here in *England*, manifestly redarguing the calculations of all our ordinary Ephemeridists: I only say, that of the Moon was by Observation in divers places not above 11½ Digits, as I had formerly computed it or at most 11¾ and not Total with 29/18' Continuance, but this of the Sun was observed at *Dantzick* 4¼ Dig. at 8h. 22' A. M. and at *Fobbing* in *Essex* more then one Digit at the time of his rising.

*A Correction of Errors escaped in the Impression of Astronomia
Carolina Anno 1661.*

P Ag. 5. line 13. read Sphere. p. 9. l. 8. for five. r. 18. p. 17. l. 14. F c g. 23°. 39' 20"
p. 18. l. 19. r. 3. 5. 22. 23. p. 23. l. 16. r. 1590. p. 28. l. 23. r. 3. 941584. p. 29. l. 8.
r. T. P. 115215. l. 9. r. C P. 123980. p. 32. l. 5. r. Digits. p. 34 l. 22. r. by operation. p.
49. l. 5. r. F G. 58756. p. 89. l. 16. r. residus more Radius. p. 99. l. 23. r. Dist. \odot d \odot .
6. l. 36. 19. p. 101. l. 30. r. 10. 28. p. 102. l. 4. & 5. r. Hevelius at Dantzick observed
the beginning of the Eclipse at 9^h 25' 15" the Semidiameter of, &c. p. 103. l. 24. r. Jan.
14. 7. 40. p. 110. l. 9. for $\frac{1}{2}$ r. $\frac{1}{4}$. p. 115. l. 19. for 2. 0. 9. 44. r. 2. 2. 0. 44. p. 118. l. 24. r. Telescope.
p. 119. l. the last save two. r. Catalogue. p. 120. make Damascus Diff. Mer. 2^h 36'. and
Hierusalem 2^h 30'

Tab. Alf. Rect. ∞ 17° A. R. 319° 27' 50" Tab. \mathcal{A} 1. Temp. Col. r. next after gr. 13.
r. 14. Anom. Terraz. 10' 24" Lon. \odot 1. 3°. 28'. 47" \curvearrowright Tab. Med. Mot. Annis 5000.
Mot. Apog. 1°. 28'. 20'. 0". Anom. \curvearrowright Med. 0°. 10°. Log. Dist. 5. 019279. Anom. $\frac{1}{2}$
6°. 15°. Long 2. 19. 20. 0. 7°. 0°. Inc. 0. 24. 45. 8. 18°. Inc. 2. 10. 34. 9°. 6°. Log.
5. 983046. 9°. 20°. Long. 5. 24. 31. 26. Anom. $\frac{1}{4}$ 0° 28°. Long. 6. 52. 47. 7°. 16°. Long
0. 29. 58. 55. Anom. $\frac{1}{8}$ 5°. 27°. Long. 9. 27. 34. 39. 6°. 21°. Inc. 1. 29. 6. $\frac{1}{2}$ Tab. Mot.
Med. Annis 2000. Mot. Anom. 11. 25. 25. 0. Annis 19. Mot 10. 17. 10. 30. Annis 10.
Mot 6. 3. 33. 15. Anom. $\frac{1}{8}$ 1°. 6°. Long. 8. 8. 9. 59.

Catal. Fixarum. p. 1. l. 11. Col. 3. r. 2°. 18'. l. A. p. 3. l. 16. r. Sub boreali. l. 22. C. 3.
r. 5°. 22'. l. A. Canon Triang. SIN. 88°. 7'. r. 9. 999755. and next. after 4°. 59' for 50.
r. 60.

FINIS.

